



# V300SD QUICK START MANUAL

**RACEPAK'S GUIDE TO THE MOST FREQUENTLY  
ASKED QUESTIONS ABOUT USING YOUR V300SD DATA RECORDER.**

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**This manual is for use with V300SD data recorders.**

If you are using a Racepak V50, V300, V500, Pro II, Pro I, Pro IA, Pro 1B, SC1000, 2K-3K, or 4K, you will require a different manual.

## RECORDING A RUN WITH YOUR V300SD DATA RECORDER

One of the first functions you will perform with your Racepak data recorder is to record a run. Unless your recorder has been set up to automatically start recording off of a specific event, you will need to follow this sequence.

**Step 1: Turn the power On** to the recorder. This is accomplished by switching on the toggle switch that supplies 12 volt power to the recorder. The switch can be turned on at any time prior to the run, but should be done no less than a minimum of ten seconds before you intend to press the 'Start Recording' button. Turning the power on only arms the recorder. It does not start the recording.

**Step 2:** When you want to actually start recording you must **push the momentary enable button**. There will be a slight delay (approximately 3-4 seconds) before the recorder starts logging data, so plan accordingly. In most cases the V300SD recorder has far more memory than is required, so it is unnecessary to delay the start of your recording until the last moment.

Some users request that their V Series recorder be configured to start recording off of a specific event, for example an engine RPM that is attained during the burnout. If your recorder has been configured in this manner it will not be necessary to push the enable button, but keep in mind the delay you will encounter between the time the activation point is reached, and the actual start of the recording.

**Step 3:** To end the recording simply **turn the power switch to Off**.

**NOTE:** When the power is turned off while the V300SD is recording, it may lose as much as the final three seconds of the recording period. For that reason it is important that you do not disconnect power from the recorder immediately at the completion of a run. Wait until you are sure you have collected all pertinent data, plus a few seconds of reserve.

## UPLOADING AND VIEWING YOUR RECORDING (SD MEMORY CARD METHOD)

Once you have taken a recording you will want to view your data. The V300SD recorder uses a SD Memory Card and the Racepak DataLink II program to transfer the recorded data to your computer. Follow the instructions outlined below to upload data from the SD memory card to your PC:

**Step 1:** Remove the SD memory card from the V300SD and place it in the SD memory card reader that is connected to your PC.

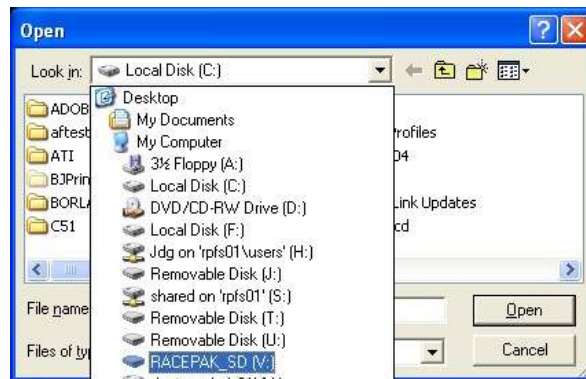


**Step 2:** Next, click the **New Upload** icon at the top of the toolbar.

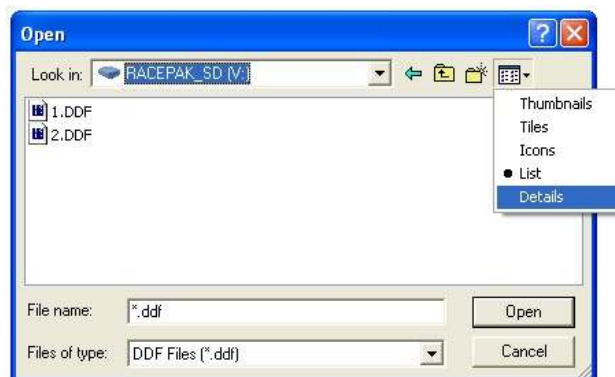
**Step 3:** The Select Configuration box will appear. **Select configuration** for your recorder. For example: V300SD-1001. This number is a combination of the type of recorder you have (V300SD) and your recorder's serial number (a four digit number, such as 1001). The Open dialog box will appear.



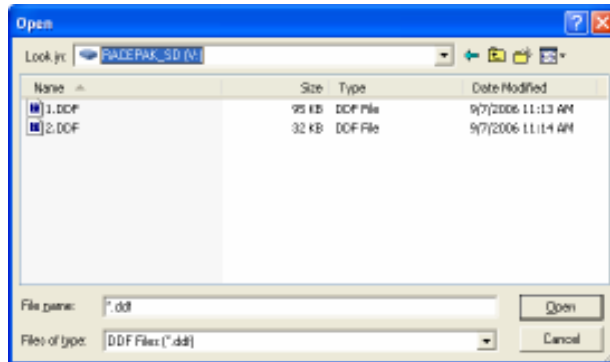
**Note:** The first time you attempt to upload data you will need to select the memory card reader drive. To do this click on the drop down arrow at the right side of the Look in: window and then from the drop down menu click on the drive labeled Racepak\_SD as shown in the picture below.



**Step 4:** Now you should be able to see the data files that were recorded by your V300SD. The first file recorded will be named 1.ddf, the second file 2.ddf, the third file 3.ddf and so on. If you would like to see the time and date the data files were created you will need to click on the Details icon (shown at left) in the upper right corner.

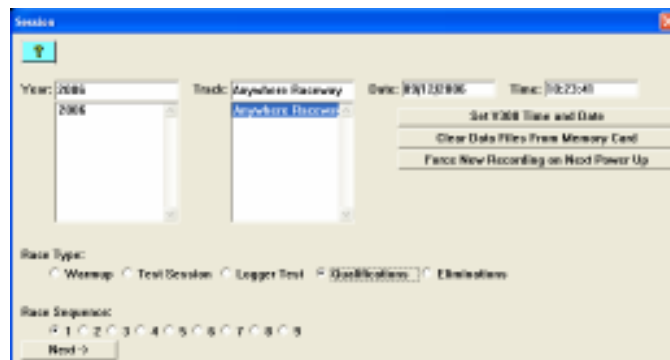


Once you have selected Details from the drop down menu the time and date will be shown, however, they typically cannot be seen because they are off to the right of the screen. To bring them into view you will need to drag the window larger by placing the mouse over the lower right corner and dragging the window larger using the left mouse button.



**Step 5:** After you have identified the data file you would like to upload, select the file by clicking on it with the left mouse button and then click on the Open button in the lower right corner of the dialog box..

**Step 6:** After the data has been uploaded from the memory card the Session dialog box will be displayed. This box will allow you to enter the session information. Enter the appropriate year and track by selecting the correct information from the selections list. If the desired year and/or track name is not on the corresponding selection list you can enter the new year or track by typing the name direction into the top selection box. The new year and/or track will be added to the selection list. Select the race type, and the race sequence information by clicking on the desired radio button. The system will automatically enter the date and time.

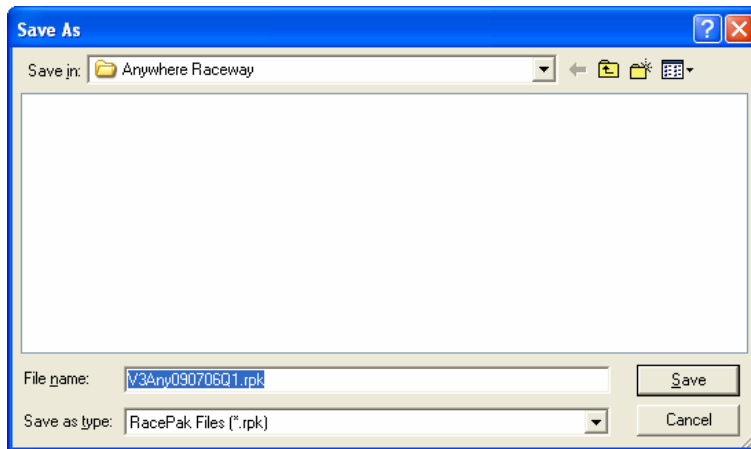


**Step 7:** Once the data file has been uploaded you may now delete the file by clicking on the Clear Data Files From Memory Card button. Clearing data files after uploading is not required, but it is highly recommended that you do not allow too many files to build up. Storing too many files on the memory card can make it more difficult to identify the proper data file on future uploads. Eventually the memory card will fill to capacity and the data logger will no longer be able to record data.

Clicking on the Clear Data Files From Memory Card will bring up the Memory Card Maintenance dialog box. To delete all of the data files on the memory card click on the Delete All Files button. To delete some of the data files on the card first click on the check boxes of the files you want to clear or delete. The click on the Delete Selected Files button. When finished click on the Exit button to exit this screen and continue.



**Step 8:** Select OK or Next depending on your configuration file. Additional dialog boxes may be displayed. These are part of the Run Log sections that are user programmable to allow test information to be entered during the download process. Fill out the information as appropriate. The Save As dialog box will then be displayed as shown below.



**Step 9:** To save and view the file select the Save button. To view the file only select the Cancel button. If you select cancel you can save the file later if desired. A new file tab with the channel data will be opened. You are now ready to view the data.

## TELEMETRY (MONITORING IN REAL TIME) WITH THE V300SD

The V series of data recorders have the ability to display monitored functions on the screen of your computer in real time. You may view your data either on the graph screen or a screen that displays up to eight virtual gauges. Just as you have the choice as to which channels to display on the graph, you can also select which functions each of the gauges will display.

**Step 1:** Before starting your first telemetry session it is a good idea to verify that your DataLink software is set for the proper communication port on your computer. If you have previously performed this step you can proceed to Step 2. If you have not performed this step please see Setting The Communications Port instructions on page 7.

**Step 2:** Connect the onboard data recorder to your PC with the Racepak serial cable.

**Step 3:** Turn power ON to the data recorder.



**Step 4:** With the Racepak software open on your PC **select the New Telemetry icon** on the toolbar.

**Step 5:** If you have made any changes to your files a box will appear asking you if you want to Save the changes. Select Yes or No. If you have not made any changes this box will not appear.

**Step 6:** The Selection Configuration box will appear. In this box **select your configuration**, for example: V300-1234 (a combination of your model of recorder and it's serial number). **Click OK**.

**Step 7:** You will be asked for Session Information. Fill in any blank boxes and **click NEXT**.

**Step 8:** You will be asked for Run/Weather information. You can provide this information now or later. **Click OK**.

**Step 9:** The Save As box will appear and you will be asked if you want to save the file with the name provided. If you do not wish to save the session **click Cancel** to proceed. If you wish to save the session with this name click Save. If you want to save the session, but with another name, enter your own file name and then click Save.

**Step 10:** This is the time to start the car. Remember, there is no time limit when viewing data in real time, but your software may have a default stop at 1000 seconds. This can be changed to provide unlimited real time viewing.



**Step 11:** You should now see the real time telemetry screen on your monitor. To start the program **click on the Start Data Acquisition icon** or **click on Telemetry** and then **Run**. To start the real time session you will need to click on the channel button for each function that you wish to view.



**Step 12:** To stop the real time session **click on the Stop Data Acquisition icon** (the red stop light just below the green start light button on the toolbar), or **click on the Telemetry pull down menu and select Stop**.

## SETTING THE COMMUNICATIONS PORT

Newer computers are often built without a port that can be used to connect a serial cable. These 9 pin ports are often referred to as a serial port, a communication port, or a RS-232 port. For data recorders such as the V300SD that use a serial cable to enable them to display real time telemetry on the computer this presents a problem. The solution is to use a serial cable-to-USB port adapter. Unfortunately these adapters can bring with them some problems of their own. In practice they are known for trying to communicate through a Com port other than the one being used by the Racepak software. Racepak has attempted to resolve this problem by creating a COM Port Finder Utility. This program will allow you to determine which Com port the computer is using so you can assign the same port in the Racepak configuration file. If you encounter this problem you can use the procedure below to identify and reassign the Com port setting.

**Step 1:** The first and most important step is to follow the manufacturer's instructions on properly installing the serial cable-to-USB port adapter. Pay particular attention to any Windows device drivers that may be required. These drivers are typically provided on a floppy disc or a CD that was included in the package with the adapter. If the drivers are not installed the adapter will not function.

**Step 2:** After you have properly installed the serial port adapter and its drivers the next step is to find which COM port number Windows has assigned to the adapter. Connect the Racepak serial cable between the adapter and your data logger and then turn the power on to the data logger.



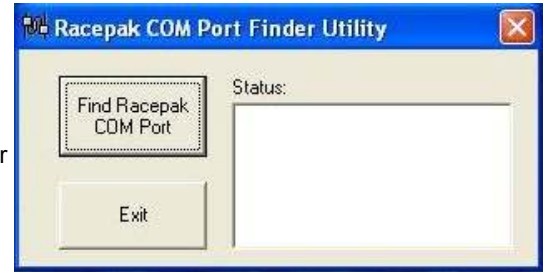
**Step 3:** Click on the **Start button** in the lower left corner of your computer screen.

**Step 4:** Click on **All Programs**. **All Programs** 

**Step 5:** From the pop up menu select **Racepak COM Port Utility Finder**. This will start the program that will automatically determine and configure the proper DataLink Com port number.  Racepak COM Port Finder Utility

**Step 6:** In the Racepak COM Port Finder Utility window that opens up click on the **Find Racepak COM Port** button and then follow the on screen instructions.

**Step 7:** Once you have followed the steps and successfully matched the COM Ports you can turn off the power to the recorder and disconnect the serial cable. **Close the Racepak Com Port Finder Utility program**. You will now need to change the COM Port setting for the Telemetry (Real Time) connection in the Configuration file of your Racepak software.

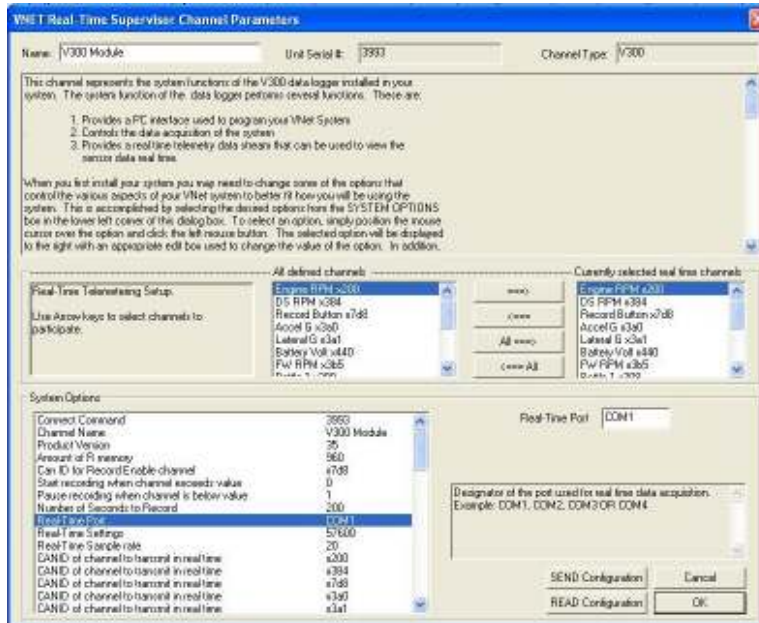


**Step 8:** Open the Racepak DataLink program. Click on **File** in the upper left corner of the screen and select **Open Car Configuration** from the drop down menu.

**Step 9:** From the Select Configuration dialog box that appears **highlight your configuration** (i.e. V300SD-3993) and then **click OK**. Your configuration file will now open. This will look like a run file without the graph. It can be identified by the tab at the top of the file having a blue wrench icon and your configuration file number.



**Step 10:** Right click on the **V300 Module** channel button. The V-Net Real-Time Supervisor Channel Parameter dialog box will open.



**Step 11:** In the Select Options window in the lower left corner of the dialog box locate and **click on Real-Time Port** to highlight the line. Note which Com port has been selected. If this is different from the COM Port that was previously identified, highlight the Com Port number in the small Real-Time Port window that is to the right of the System Options window. **Change to the new Com Port number and Click OK**

**Step 12:** Click **Save**. If you do not save this change you will have to repeat this process.


## SETTING THE CORRECT TIME AND DATE INSIDE YOUR V300SD

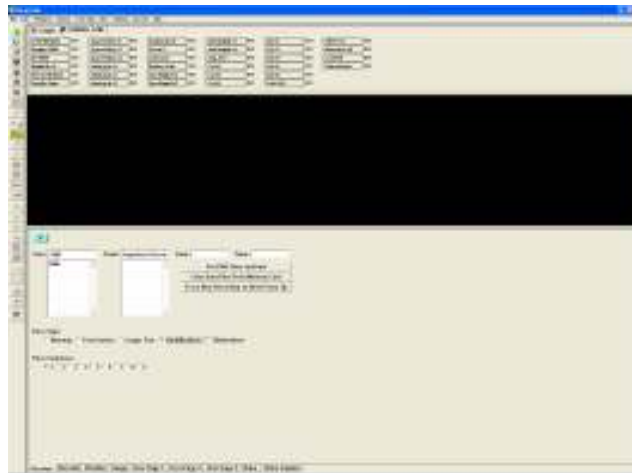
A new data file (.ddf extension) is created on the SD memory card each time a new recording is initiated. Each file is time stamped with the time and date the recording was started to allow easy identification of the data files that are uploaded to your PC. For this reason it is strongly recommended that you set and maintain the correct time on the clock in your V300SD. The time can be changed by performing the following procedure.

**Step 1:** Before beginning, **insure that the time and date on your PC are set correctly**. The time is located in the Windows system tray at the lower right hand side of your screen. The date can be seen by placing the mouse cursor over the time display for a few seconds. You can change the time and date by double clicking on the time display.

**Step 2:** Once you have set the correct time and date in your PC you can start the Racepak DataLink software. In the Datalink software open your car configuration by clicking on **File**, and then from the drop down menu select **Open Car Configuration**. The select configuration dialog box will open. **Select the configuration** with your model and four digit serial number (for example V300SD\_1234). This will open your configuration file.



**Step 3:** Click on the **Organize Pane** icon.  This will open the run log window shown below.



**Step 4:** Insert the **V300SD memory card** into the memory card reader. Now click on the button labeled **Set V300SD Time and Date** and follow the online instructions.



**Step 5:** This procedure writes a file that contains the current time and date on the memory card. For the time to be set accurately, you must **immediately remove the memory card from your PC's reader and place it back into the V300SD and turn on the power for at least 5 seconds**.



## SETTING THE SCREEN RESOLUTION

The Datalink program is capable of presenting large amounts of information on your computer screen. Due to the wide variety of video cards, monitors, and your personal preferences, the default layout of the DataLink software may not be optimum for your computer. In some cases the screen will not display the full picture. In this case it will be necessary to change the Screen Resolution setting in your Windows Desktop. The Windows Desktop contains the default screen layout that is used by all of your software, including DataLink, in determining how to display data on the video screen. It is not necessary to have your DataLink program running when performing this task.

**Step 1: Click the Start button** on the task bar at the lower left corner of your screen.

**Step 2: Select Settings.**

**Step 3: Select Active Desktop.**

**Step 4: Click on Customize My Desktop.** The Display Properties dialog box will appear on the screen.

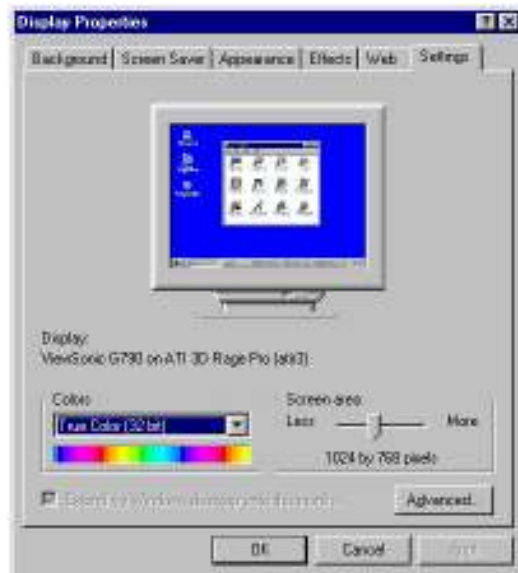
**Step 5: Click on the Settings tab.**

**Step 6:** On the Setting page **locate the area labeled Screen Area.** The slide bar in this area is used to adjust the screen resolution.

**Step 7: Click on the slide bar and move it left or right until the setting changes to a minimum of 1024 X 768 pixels.** Larger monitors may be able to support higher resolutions, but small monitors may need a lower resolution to display a full screen view.

**Step 8: Click the OK button.**

You may want to open other software programs you run on your computer to verify that the screen resolution you have chosen still displays those programs properly.



## SETTING THE YEAR AND TRACK DATA ON SESSION PAGE

When you upload a new run file the software can automatically fill in some of the information about the run for you. Among these items are the year, the track at which you are running, the date of the run, and the time of the day. It will be necessary when you make your first run of the meet to set up the configuration file to properly install this information on each run you upload.

**Step 1:** Open the **DataLink** program on your PC.

**Step 2:** Select **FILE** and then **OPEN Car Configuration** from the menu at the top of the page. The Select Configuration box will appear.

**Step 3:** In the Select Configuration box **highlight your recorder** (Example: V300SD-1001, a combination of the model of recorder you have and it's serial number) and **click OK**. A screen will appear that looks like a regular run file screen, except the file tab at the top of the page will show your configuration number with a blue wrench.



**Step 4:** Open the **Session log** page by clicking on the **Organize Panes** icon on the toolbar.

**Step 5: Locate the Year: window** on the Session page. From the selection below **highlight the year** you wish to display on the new files. If the year is not included in the list click on the window at the top of the list and type in the year. The new year will be added to the list.

**Step 6: Locate the Track: window** on the Session page. **Highlight the track** at which you are running. If the track is not included on the list, click on the window at the top of the list and type in the name of the track. The new track name will be added to the list for future use.

**Step 7:** At this time you may want to verify the information that will be placed in the Date and Time windows that are adjacent to the Year and Track windows will be correct. This information is attained from your computer's internal clock and calendar. By double clicking on the time display in the lower right hand corner of your screen you will open the Date/Time Properties box. In this box you can verify the current settings and make any necessary changes.



**Step 8:** Click **Save**.

**Step 9:** **Close** the car configuration file.

## SETTING THE START TIME

The start time, or zero point, of the timeline can be set to any position on the screen graph. By aligning the start time with the actual beginning of your run you will be able to determine the elapsed time from the start of the run to any location you place the screen cursor. The window at the upper left hand corner of the graph will display this information.

Before setting your start time you need to decide which event you will use to indicate the actual start of the run. Different types of cars will use various indicators. A Pro Stock car may use the voltage signal from the two step ignition switch that is triggered by the clutch pedal. A dragster with a centrifugal clutch may use the downward spike of the fuel pump pressure. Cars with an automatic transmission and a transbrake may monitor the signal to the transbrake solenoid. Other cars may use the first movement of the Acceleration G-meter or the first revolution of the drive shaft. Whichever event you elect to use, in order to provide consistency, always set the start time off of that event.

**Step 1:** With the run file displayed on your screen, **zoom in as far as you can on the area of the graph line you will use to establish the start of the run**.

**Step 2:** **Place the screen cursor** directly over the event that indicates the start of the run. You can use the right and left arrow keys on your keyboard to nudge the cursor into the exact location.



**Step 3:** **Left click on the Set Start Time icon**.

**Step 4:** This will bring up the Confirm Data Start Time Change box. This box simply informs you that you are about to change the start time of this file to the new indicated point on the timeline. **Click OK button**.



**Step 5:** Your screen will now return to it's normal timeline size and the new zero point will be aligned with the start of the run. To save this change **click Save**.

Your start time will now be shown at this position whenever you open this file unless you repeat this procedure and set another new start time.

## SETTING THE USER SCALE

The User Scale is the amount of recording time that is displayed across the screen. Generally Racepak will set this to display from .5 seconds before the start of the run (-0.500), to 1.0 or 2.0 seconds beyond the typical elapsed time recorded by a car such as your car. Viewing the data that was recorded before or after that portion of the recording requires using the arrow icons to scroll forward or backward on the run. If you would like your screen to display a larger or smaller portion of the run you can reset your User Scale to whatever time frame you desire by following the steps below:

**Step 1:** From the main menu bar at the top of the screen **click on SETTINGS** and then **PREFERENCES**. This will bring up the Edit Preferences dialog box.



**Step 2:** From the Edit Preferences dialog box locate the User Scale Begin Time[s]: window. You can **change the starting time of the screen display by highlighting this window and typing in the new start time**.

**Step 3:** Directly below the User Scale Begin Time is the User Scale End Time[s]: window. **Highlight and type the new end time** in this window to reset the length of time displayed on the screen.

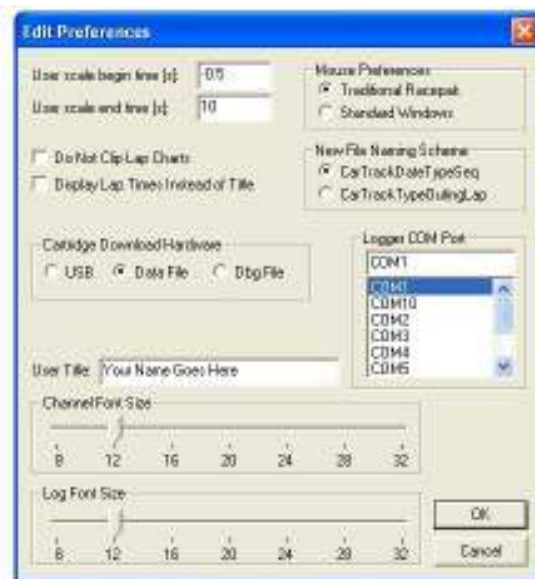
**Step 4:** Click the OK button.

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## ADDING YOUR NAME TO THE SCREEN GRAPH

While you are working in the Edit Preferences dialog box you might want to add your own name to the screen graph if it hasn't been done for you already. This is done in the same manner as you used to set the User Scale above.

**Step 1:** From the main menu bar at the top of the screen **click on SETTINGS** and then **PREFERENCES**. This will bring up the Edit Preferences dialog box.



**Step 2:** From the Edit Preferences dialog box locate the User Title: window. You can change the name that appears on the graph screen by **highlighting the window and typing in the name you wish to appear**.

**Step 3:** Click the OK button.

## SETTING THE CHART COLORS

The colors that are used on the graph screen can be customized to suit your personal preferences. Depending on the type of computer you use, and the environment where you use it, some combinations of colors can make it easier for you to see the data on the screen. If you are in the habit of printing copies of the graph it can also be helpful to use a white background screen, as it speeds up the printing process and uses less ink out of your printer.

**Step 1:** Open a run file.

**Step 2:** From the menu bar at the top of the screen **select SETTINGS** and then **CHART COLORS**.

This will bring up the Chart Color box. Note that the Chart Color box has three selection boxes: Foreground, Background, and Avg. Cursor.

The Background selection controls the color of the graph background. White or black are most commonly used.

The Foreground selection sets the colors of the graph grid lines, plus the colors for the numbers on the timeline and graph scale. Use a foreground color that provides the greatest contrast with the background color you chose.

The Average Cursor selection sets the colors of the dotted vertical lines that appear when you use the averaging feature. If you are unfamiliar with this feature see: Using The Averaging Feature.

**Step 3:** Experimenting with different combinations is easy. **Click on the color of your choice in each selection box.** To view how the colors will look on the graph **click the OK button.**

## CHANGING FONT SIZES

Racepak users sometimes want to change the size of the print that appears on their screen. It is possible with the customizable Datalink software program to increase or decrease the font sizes. Most software programs are defaulted to display 12 point fonts. You have the option of choosing a font size between 8 points and 32 points in size, however we have found that anything smaller than 11 points become difficult to read, and anything above 16 points starts using up screen space unnecessarily.

**Step 1:** Open a run file.

**Step 2:** **Select SETTINGS** and then **PREFERENCES** at the top of the screen. This will bring up the Edit Preferences box.



**Step 3:** At the bottom of the Edit Preference box are two scroll bars, one for Channel Font Size and the other for Log Font Size. **Move the scroll tabs** on either scale to the desired font size to change the size of the channel buttons or the text on the log pages.

**Step 5:** **Click OK** button and the change will immediately appear on the run file.

## SETTING THE SCREEN PANE SIZES

The Racepak DataLink program you see on your computer monitor is actually composed of four screen panes. Across the top of the screen is the pane containing the Run File tabs and the Channel Buttons. The middle portion of the screen contains the graph pane. The pane at the bottom of the screen contains the tabs and the log pages associated with the run file currently being displayed. Finally, on the left side of the screen is the icon toolbar. You have the ability to resize the height of all of the pane sizes except the toolbar. You can even set up a selection of pane size combinations that allow you to scroll from one combination to another by clicking on an icon.

### TO SET THE INITIAL SCREEN PANE SIZE

**Step 1:** Open a run file. Then **click on Settings** and **Screen Sequence Sizes** at the top of the screen. This will bring up the Edit Screen Size Sequence box.

**Step 2:** Note that the Edit Screen Sequence box has four columns: Enabled, Channel Size, Graph Size, and Log Size. Click to **delete all checkmarks in the Enabled column except the top row**. This will allow you to work on just the first screen sequence size that appears when you open a file.

**Step 3: Change the Channel pane size** by clicking on the Channel Size box in row one and typing in the new pane size (Example, 18). The number you type will be the percentage of the screen you want to allot to the Channel pane. Don't worry if you don't get it right the first time. You can adjust this number later suit the number of channel button your system contains.

**Step 4: Change the Graph pane size** by clicking on the Graph Size box in row one and typing in the new pane size (example, 74). Notice that as you do this the number in the Log Size box will automatically change so the total of the three boxes in the row will equal 100%.

**Step 5: Click OK** button.



**Step 6:** On the toolbar **select the Organize Panes** icon. When you click on this icon the screen panes will change to the new sizes you have assigned to them.

### SCROLLING TO DIFFERENT SCREEN PANE CONFIGURATIONS

Another feature of the programmable screen pane sizes is the ability to scroll from one set of screen pan sizes to another while the file is open. For example, from your initial screen page configuration you may want to enlarge the Log Pane size so you can view the full log page for whichever tab is selected. Rather than clicking on the bar above the log page tabs and dragging it upward, which will reduce the graph pane and enlarge the log page pane, you can do this with a single click of the mouse.

**Step 1:** Open a run file. Then **click on Setting** and **Screen Sequence Sizes** just as you did when setting the initial screen pane sizes. This will again display the Edit Screen Size Sequence box.

**Step 2: Enable row #2** on the Edit Screen Size Sequence box by clicking on the Enable Box for that row.

**Step 3: Repeat steps 3 through 5 from above.** Start by assigning the Channel Size box to 18% and the Graph Size box to 14%. This will enlarge your Log Page pane to 68%.



**Step #4:** On the tool bar **select the Organize Panes** icon. When you repeatedly click on this icon the screen panes will scroll back and forth between the sequences you have assigned on rows #1 and #2.

Using this procedure will allow you to assign up to eight different selections of screen pane size configurations.

## CREATING & VIEWING QUICK GRAPHS

Almost everyone has their favorite set of channel graphs they look at first when viewing a newly uploaded file. Some even want to have the graph lines from the various channels in specific colors. Rather than always needing to click on each of the channels individually, and then scrolling through the color pallet on every channel, Racepak provides a method of bringing your favorite combination onto the screen with ease. This is done with Quick Graphs, a program that allows you to set up channel combinations that can be accessed with just a few clicks of your mouse.

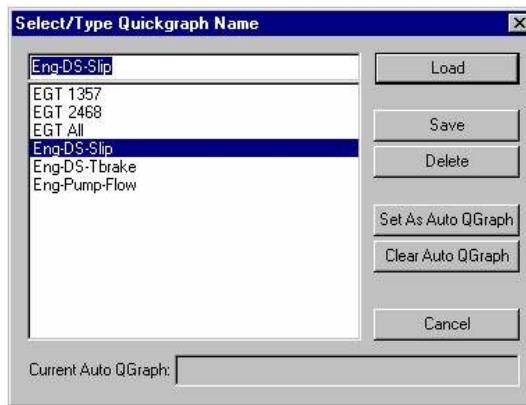
### CREATING QUICK GRAPHS

**Step 1: Open any run file.**

**Step 2: Select the combination of channel graphs** that you wish to display as a Quick Graph. You can repeatedly click on each of the channel buttons you select to change the graph line to the color you want displayed. For example, many people like their engine RPM to always be in red, and the drive shaft to be blue.



**Step 3: Click on the Quick Graph icon** on the toolbar. This is the icon with a picture of a green computer mouse and a yellow sheet of paper. The Select/Type Quickgraph Name dialog box will appear on your screen.



**Step 4: Click on the top window** of the Select/Name Quickgraph Name box.

**Step 5: Type in the name you want to assign** to the selection of channels you have just chosen, for example: ENG-DS-SLIP or Quick Graph #1.

**Step 6: Click the SAVE** button.

Your selection of channels will now be available under the name you assigned whenever you open the Quick Graph selection. You can repeat this process to create as many quick graph combinations as you wish. To view the quick graphs on any file you open follow the steps below:

### VIEWING QUICK GRAPHS

**Step 1: Open the run file.** This can be either a newly recorded run file, or an existing file.



**Step 2: Click on the Quick Graph icon.** The Select/Type Quickgraph Name dialog box will appear.

**Step 3: Select and highlight the Quick Graph** you want to display. Your selection will appear in the window at the top of the Quick Graph selection list.

**Step 4: Click** on the **LOAD** button. The channel graphs for the Quick Graph selection will now be displayed on your graph screen in the colors you assigned.

You can add other channels to those on your graph by clicking on their individual channel buttons, but returning to the Quick Graph box and choosing another selection of Quick Graphs will erase all of the channels currently on display.

## ACCESSING SECURITY KEYS NUMBERS

The security codes used by your Racepak DataLink software are something most users will never need to be concerned with. They were automatically loaded into your computer when you installed your software. However, there are a couple of situations where you may need to know your security key numbers. One is if you are trying to share your files with someone who also has the DataLink program in their computer. The other is if you are trying to open someone else's run file on your computer. In either case the security keys for the data logger that recorded the run must be added to the computer trying to view the run. Finding the security key numbers is explained below. How to load them into another computer is covered in the Quick Start page titled Adding Security Unlock Keys.

**Step 1: Open the Racepak DataLink program** on the computer.

**Step 2:** From the main menu bar at the top of the screen **select Security** and then **Show/ Edit Security Key List**. The Add Security Unlock Keys dialog box will then appear.



**Step 3:** The numbers you will need are in the Currently Installed Serial Numbers: window of the Add Security Unlock Keys box. They are in the columns titled HW Type, Serial Number, and Unlock Key. **Write these numbers down exactly as they appear.**

**HW Type:** denotes the model of recorder to which this security number was assigned. For example, it could be V300, V300S, V300SD, or V500. For your information the 'S' refers to a recorder that was set up to upload via serial cable, while those without the 'S' upload with a data cartridge. There may be more than one unlock key for the model of recorder you are accessing, so it is important that the next item, the serial number, be correct for the recorder whose files you wish to view.

**Serial Number:** This 4 digit number is the serial number of the recorder to which this security key is assigned. If you are unsure of the serial number it can be found on the sales invoice, on the black software licensing disc, or engraved on the underside of the recorder.

**Unlock Key:** This exclusive 6 to 12 digit number is the key to opening the files.

These are the numbers that will be required to share files from one recorder to another. Do not copy the number in the Level column. It will not be needed.

To load this security Unlock Key into another computer see Adding Security Unlock Keys.

## ADDING SECURITY UNLOCK KEYS

Opening Racepak files that were recorded by one system, by using the software from another, requires that the security unlock keys from the recording logger be added to the second system's software. To do this you must first access the security key numbers from the software used with the recording data logger (see Accessing Security Keys Numbers on previous page), and then add them to the second system following the steps below:

**Step 1: Open the Racepak DataLink program** in the computer on which you will be installing the new security key numbers.

**Step 2:** From the main menu bar **select Security** and then **Show / Edit Security Key List**. The Add Security Unlock Keys dialog box will then appear.



**Step 3:** In the Add Security Unlock Keys box **highlight the Product Type:** box and **type the numbers that were copied from the HW Type column** (Example V300SD). It is important that these are typed in upper case letters.

**Step 4:** In the **Serial Number:** window type the 4 digit serial number.

**Step 5:** In the **Unlock Key:** window type the 6 to 12 digit **Unlock Key** number.

**Step 6:** Click on the **ADD Above Serial Number Information** button.

**Step 7:** Click on the **DONE** button. The computer to which this information has been added will now be able to open the files from the recorder to which the numbers were assigned.



## ADDING NEW V-NET SENSORS

When you have added a new V-Net sensor and module to your onboard recorder system you will also need to change the software to recognize the addition. If you do not, the DataLink program will not display the data from the new addition. Earlier types of recorders required that the software be sent to Racepak to effect such changes. With the V series of data recorders this process is simple and can be performed in the field. Once you have installed the new sensor and V-Net module in your car, here is all you will need to do:



**Step 1: Open the Racepak DataLink program.**

**Step 2:** Select **FILE** and **OPEN CAR CONFIGURATION** from the main menu bar. The Configuration box will appear.

**Step 3: Highlight your recorder configuration** in the left side window (example: V300SD-1001, your model recorder and it's serial number). This will add your configuration number to the window on the right side of the box. **Click On OK.** A configuration file screen will appear that is similar to a regular run file screen. It can be identified by the file tab at the top of the screen containing your configuration number and the picture of a blue wrench.

**Step 4: Connect the computer to the onboard recorder** using the serial cable that came with the V300.

**Step 5: Turn the power On** to the recorder.

**Step 6:** On the main menu bar **select EDIT** and **READ V-NET CONFIGURATION**. A Message Log box will appear on the screen.

**Step 7:** The software will start reading the car configuration, recognizing the new sensor and module. When it has finished a **Device Is Read Successfully** message will appear in the Message Log box.

**Step 8:** After Device Is Read OK message appears **Click OK.**



**Step 9:** Click on the **SAVE** icon. The new sensor has now been added to your car configuration.

This process will only work for sensors that are added to the V-Net port of V series recorders. It does not work for sensors that are added to the Analog or RPM ports of these system. If you will be adding sensors to those ports we suggest that you following the instructions that were included with the new sensor.

It will also be necessary for your to change the Real Time Configuration when adding any new sensors. The process above does not enable the new sensor to be displayed in real time.

## VIEWING THE RUN LOG PAGES

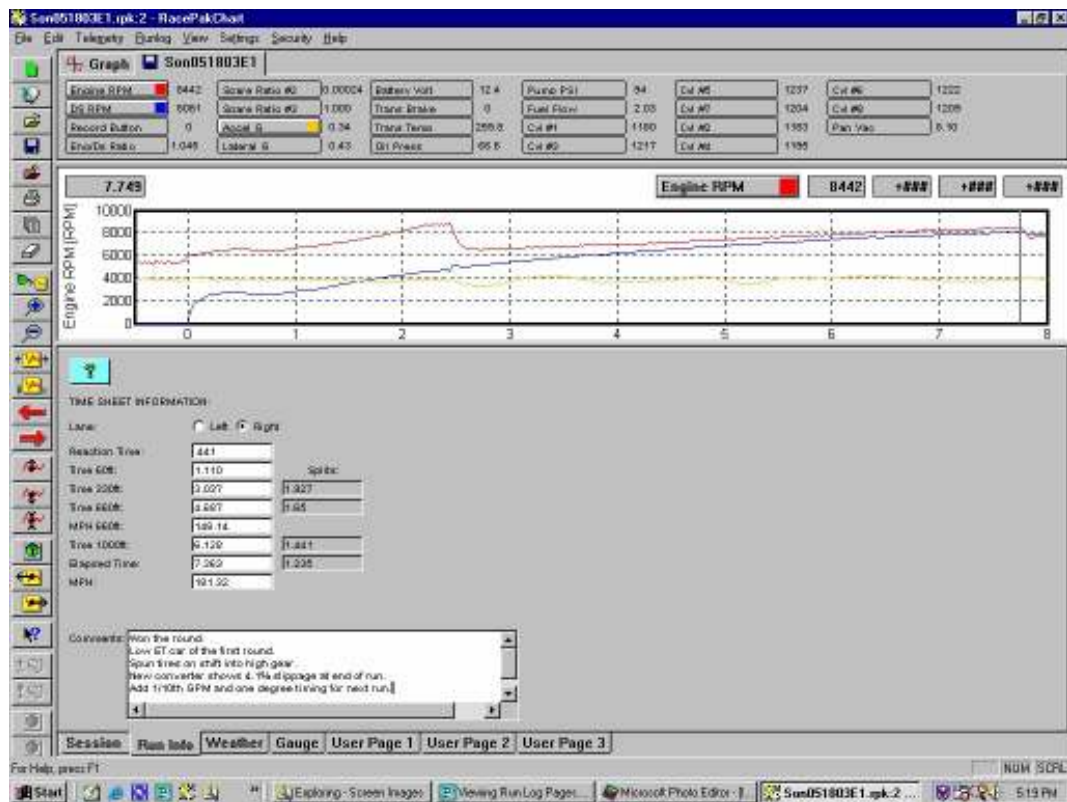
Thanks to the variety of monitor sizes and selection of screen resolution settings it is somewhat common for racers to 'lose' their run log pages. The run log pages are the pages where you record such data as the weather, run times, and tune up associated with the file that is being displayed. In reality these pages aren't really 'lost', it is just that the tabs you use to access these pages have slipped out of view at the bottom of the screen. There are two methods you can use to quickly 'find' the log page tabs again:



**Step 1: Repeatedly click on the Organize Panes icon** on the toolbar. If your software has been configured to display different screen pane percentages the chances are that at least one of the Organize Panes selection will bring the log pages and their tabs back into view.

**Step 2:** If the first method does not produce the log pages or their tabs you can **drag the border bar upward**. Try moving the arrow mouse cursor over the bar that borders the screen just below the time line numbers. When you move the arrow over this bar the arrow changes into two horizontal bars with small arrows above and below the bars. When this occurs left click and hold the mouse key down, then drag the border bar upward. When you release the mouse the log pages and file tabs should appear.

The real solution to prevent this occurrence from happening is to either reset the screen pane sizes (see Setting The Screen Pane Sizes) or your screen may need to be rescaled (see Setting The Screen Resolution).



## OVERLAYING RUN FILES

One of the most frequently used features of the DataLink software is the ability to compare one run file against another by overlaying the graph lines from both runs on the screen. This provides a quick visual comparison of where any losses or gains occurred during the two runs. With DataLink Lite (or higher versions) you can overlay as many files as you wish, but you will find that trying to overlay too many runs at one time will start cluttering the screen.

**Step 1: Open the run file** you plan to use as the comparison file.

**Step 2: Click on the channel buttons** to display just the graph lines that will be compared with another file.

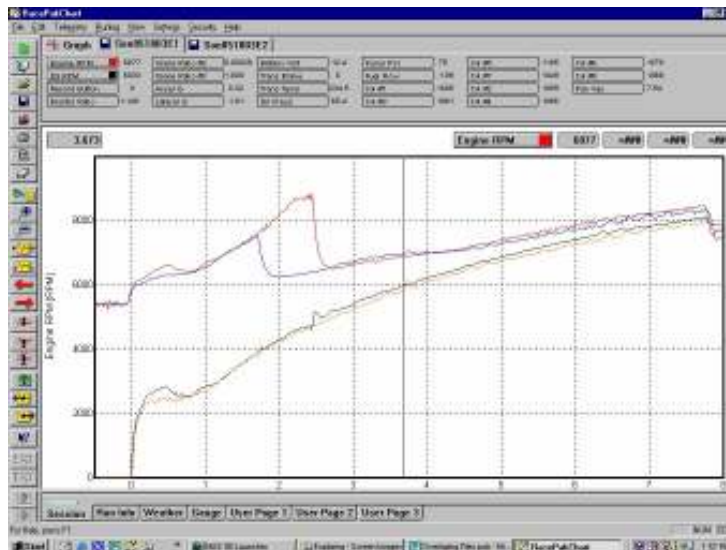


**Step 3: Click on the Open File Folder icon.**

**Step 4: Proceed as you normally would** to open the file you want to compare to the one that is already displayed on the screen. When the second file is opened its tab will be placed alongside the first file's tab at the top of the screen.



**Step 5: Click on the same channel buttons** in the second file as you illuminated in the first file. This will display the identical channel graphs for both files on the screen. You may now add or remove channels from the screen, but remember that you can only manipulate the file whose file tab is forward of the others. To work with a file that is in the background (one that has had a file laid over the top of it), you must click on the file tab of that run to bring it to the front.



## ZOOM IN / ZOOM OUT SCREEN VIEW

You can look at the graph lines in greater detail when you zoom in on the graph. A typical graph screen will have grid lines that are spaced at one second intervals. It is possible to zoom in to the point where these grid lines are as small as 1/100th of a second intervals, revealing much more detail than what can be seen on the bigger screen. There are two methods of doing this.

### ZOOMING IN USING THE PLUS (+) AND MINUS (-) ICONS

**Step 1:** With the run file displayed on your screen, point the arrow screen cursor at the item on the screen you wish to enlarge. **Left click to move the vertical cursor to this location.**



**Step 2:** Click on the Zoom In icon on the toolbar. The screen will become slightly enlarged.

**Step 3:** Repeatedly click on the Zoom In icon until the magnification has increased to show the detail you want.

When you are through looking at the zoomed in screen you can reduce the magnification in steps by repeatedly clicking on the Zoom Out icon just below the Zoom In, or you can return to the original screen size in one step by clicking on the User Scale icon, the yellow box with a red squiggly line and an X and an O on either side of it.



### ZOOMING IN USING THE MOUSE

A second, and quicker method of zooming in on a portion of the screen is to draw a box around the area of interest with your mouse. This method will magnify the area within the box to full screen view in one step.

**Step 1:** With the run file displayed on your screen, locate the area you want to enlarge.

**Step 2:** With your mouse, **move the arrow cursor to the upper left of the area you want to enlarge. Depress and hold the right mouse button down and slowly move the cursor toward the lower right of your graph.** A box will appear on the screen. Stop and then **release the mouse button** when you have defined the area you want to view. The area within the box will be magnified to full screen view.

**Step 3:** This enlarged view will not contain the vertical cursor unless the box you drew covered a portion of the cursor. To insert the vertical cursor in the enlarged screen move the mouse arrow onto the portion of the screen you want it to be located and left click.

To reduce the screen to it's original size you can use the same methods as outlined above by using the plus and minus icons or the User Scale icon.

### ZOOMING OUT

There will be occasions where you may want to zoom out to see a greater portion of the recording than displayed in the normal screen view. You might even want to view the whole recording period on one compressed screen. **This can be accomplished in the same manner as you used for zooming in, but using either the Zoom Out or the Autoscale icons.** When using the Autoscale icon it isn't necessary to right click and draw a box. The screen will automatically display the entire recording period as soon as you click on the Autoscale icon.



## CLEARING THE GRAPHS

Displaying graphs on your screen is usually done by clicking on the individual channel buttons. In due time the screen becomes loaded up with a lot of graph lines. Often when this happens you may want to clear all of the graph lines off of the screen and start fresh. This can be done without the need to individually click on each of the channel buttons again.



**Step 1: Click on the Clear All Graphs** icon on the toolbar. Clicking on this icon will erase all of the graph line currently being displayed, but will not close out the file.

**Step 2:** You are now free to **open up any new selection of graph lines** by clicking on their channel buttons.

If you have multiple files open at one time, such as when overlaying graphs, you can clear the graph lines on all of the files at one time by double clicking on the Clear All Graphs icon. Once again, this will remove the graph lines on all of the files, but will not close the files.

## AVERAGING

A unique feature of the DataLink software is it's ability to provide you with analytical tools. One of those tool is the Averaging program. With this tool you can define a segment of your run and the software will display the average of all samples taken on each channel during that period of time. For example, you might want to know what the average longitudinal G-force (acceleration) was during the time the car was in first gear, or the average exhaust gas temperature of each cylinder while in high gear, or the average engine RPM over the full course of the run. In addition to providing the average, this tool will also show you the minimum and maximum values that were recorded during the specified time segment, plus the numeric value at the present location of the screen cursor.



**Step 1: Open a run file.**

**Step 2:** Click on the channel button to **display the graph line** for the function you want to average, for example the Engine RPM channel.

**Step 3: Set your screen cursor** to the location that you want as the starting point of the averaging time frame.

**Step 4:** On your keyboard **select the Start Bracket key**. This key has the [ symbol on it. When you strike this key a dotted vertical line is placed on the screen where your cursor is located.

**Step 5: Move the screen cursor** to the location on the screen where you want to **end the averaging** time frame.

**Step 6:** On your keyboard **select the End Bracket key**. This key has the ] symbol on it. Another dotted line will appear at the cursor location when you strike this key.

**Step 7:** You now have the ability to **read the averaging** of any channel displayed on the screen. Directly above the upper right hand corner of the screen is a large channel button. This is known as the Active Channel button. To it's right are four windows. These windows will display in order:



Window 1 (8563): The numeric value of the active channel at the cursor's present location.

Window 2 (8775): The average of all samples recorded between the opening and closing brackets on the screen.

Window 3 (7072): The minimum value recorded within the bracketed area.

Window 4 (9605): The maximum value recorded within the bracketed area.

**Step 8:** If you have other channels illuminated on your screen in addition to the active channel, you can display the same averaging information for those channels by simply double clicking on the active channel button. It will **scroll through each of the illuminated channels**. Note that as you click on the active channel button to scroll through the channels that the scale value at the left edge of the graph will change to display the scale for whichever channel is being displayed. Remember, the graph line must be displayed on the screen for the active channel button to recognize it.

## COPY A FILE TO DISC

If the need arises to transfer a file from one computer to another, you may want to copy the file to a floppy disc. This can be done by following the steps outlined below:

**Step 1: Insert a fresh formatted disc** in your floppy disc drive. This is usually the [A] drive of your computer.

**Step 1: Open the DataLink program.**



**Step 2: Click on the Open folder icon.** The Open dialog box will appear on your screen.

**Step 3:** In the Open dialog box **double click on the file folder** you wish to open. You will probably need to follow a path through several folders to the actual file you want to copy. Double click on each of the folders you want to open until the name of the file you want to copy is visible.

**Step 4: Highlight the file** you wish to copy.

**Step 5: Right click on the highlighted file.** A drop down menu selection will appear.

**Step 6:** Move your arrow cursor over **SEND TO ►**. Another drop down menu will appear.

**Step 7:** Move the arrow cursor to **highlight 3 1/2 Floppy [A]**.

**Step 8: Left click on the highlighted 3 1/2 Floppy [A] to copy** the file to the disc. Once the transfer is complete you can remove the floppy disc from your computer.

If you are copying a file for the purpose of viewing it in another computer, that computer must be equipped with the Racepak DataLink program and have your security information installed before your file can be opened and read. If you are not familiar with this information see Adding Security Numbers (pages 12 & 13).

## FINDING / VIEWING OLD RUN FILES

It isn't uncommon for racers to be unable to find a previously recorded run file in their computer. They know they recorded it, and they have viewed it before, but now it seems to have disappeared into thin air. It isn't in the folder where it should be located. Trust us when we tell you that no one has stolen it, nor have the cyber-monsters eaten it when you turned the computer off. For the file to be totally missing you would have had to purposely or accidentally deleted it. In almost every case of a mysteriously missing run file it is merely stored in the wrong folder location. Rather than the file being located in the appropriate folder where it can be recalled by searching the year and track, it has been sent to reside somewhere else. So how do you find these lost files? It will take some searching, but try this:



**Step 1:** In the lower left corner of your screen **click on the Start button**. A pop up menu will appear.

**Step 2:** Select **FIND** and then **FILES OR FOLDERS** on the pop up menu. Computers using the Windows XP operating system will select Search and then File Or Folders.

**Step 3:** Click on the **FILES OR FOLDERS**. The Find: All Files box will appear.



**Step 4:** In the Find: All Files box **click on the Name and Location tab** if it isn't already selected.

**Step 5:** In the **Named:** window **type any information you remember about the missing file name**. See the tip below for help on remembering file names.

**Step 6:** In the **Look In:** window **make sure the [C:] is selected**. This will allow the search to look at all files on your main hard drive. If the [C:] is not already selected click on the down arrow at the end of the window and a drop down menu will appear allowing you to select the [C] drive.

**Step 7:** Click the **FIND NOW** button. The search may take a moment to start, and then a period of time to search through all of your files. A rotating magnifying glass icon will indicate that the search is taking place. When the search is finished a list of all files matching your description will be displayed. If none were found you may need to modify your search description, perhaps putting a space between IND and 09 (think of how you commonly assign your file names). If the file you are seeking appears on the list you can display it by highlighting it in the list and double clicking on it.

Once you have found your missing file the next question becomes how to get in back into the appropriate file. The method of doing this has changed with the various versions of Microsoft® software since they introduced Windows. The common method of moving files by dragging and dropping doesn't work. We suggest that you review your computer's software manual, paying close attention to any instructions relating to working within the file folders.

Tip: all Racepak file names are usually composed of letters and numbers in a predictable sequence. Follow this guide when looking for old files:

**First Letter:** Will be the heading of the Configuration File in which your file is located. For example almost all V series recorder will have a file name that begins with the letter 'V'. If you have a Pro series recorder, or you have multiple cars uploading to the same computer, the first letter will probably be 'A' (A car) or 'B' (B car).

**2nd thru 4th letter:** Will be the first three letters of the name of the track where the recording was taken (example, IND for Indianapolis). This will be followed by the Julian date of the run (example, 050303, for May 3rd, 2003).

This much is usually pretty easy to remember. Try starting your search with this amount of information followed by **\*.rpk** on the end. By adding the star (hold down the shift key and strike the number 8) and the period, and the letters rpk, your search will be limited only to Racepak files, and not every file in the computer.



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