V-NET QUICK START MANUAL

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

This manual is for use with V50 / V300 / V500 / V600 data recorders.
If you are using a Racepak Pro II, Pro I, Pro IA, SC1000, 2K-3K, or 4K, you will require a different manual.

RECORDING A RUN
V300 / V500 / V600 RECORDERS

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 V Series recorders have 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**.

The length of available recording time you have can vary depending on how much memory your recorder contains, the number of sensors you are monitoring, and the sample rate that is assigned to each sensor. Due to the lengthy recording time available with the V series recorders, Racepak sets a default time for the recorders to automatically stop recording. This is usually set at 200 seconds. You have the option of changing the default stop time through your software.

TELEMETRY / MONITORING IN REAL TIME WITH V SERIES RECORDERS

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 recorded functions each of the gauges will display.

Step 1: Connect the onboard data recorder to your PC with the Racepak serial cable.

Step 2: Turn power ON to the data recorder.

Step 3: With the Racepak software open on your PC **select the New Telemetry icon** on the toolbar.

Step 4: 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 5: 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 6: You will be asked for Session Information. Fill in any blank boxes and **click NEXT**.

Step 7: You will be asked for Run/Weather information. You can provide this information now or later. **Click OK**.

Step 8: 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 9: 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 10: You should now see the real time telemetry screen on your monitor. To start the program **click on the Start Data Acquisition icon**. To start the real time session you will need to click on the channel button for each function that you wish to view.

Step 11: 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**.

UPLOADING AND VIEWING YOUR RECORDING
(SERIAL CABLE METHOD)

Once you have taken a recording you will want to see your data. The V series recorders can transfer their recorded data to your computer by two methods, either direct connection with a serial cable, or by using a data cartridge. If your system has been set up to use the serial cable follow the instructions outlined below

Step 1: Connect the onboard recorder to your PC using the serial cable. The power to the onboard recorder must be off.

Step 2: Start the DataLink program on your PC.

Step 3: Turn the power ON to the onboard recorder.

Step 4: Select the NEW UPLOAD icon on the toolbar.

Step 5: The Select Configuration box will appear. **Select configuration** for your recorder. For example: V300S-1001. This number is a combination of the type of recorder you have (V300S) and your recorder's serial number (a four digit number, such as 1001).

Step 6: Click OK.

Step 7: The system will now start uploading the data from the onboard recorder to the PC. When the transfer is complete **Click OK.**

Step 8: The Session Selection box will now appear. **Click on the appropriate selections in the Session box** to identify the run. If the proper track and year are not listed, type the correct information directly into the top of their respective boxes.

Step 9: When finished select **OK** or **NEXT**.

Step 10: Depending on your configuration other selection boxes may appear. Fill in the information in those boxes and select **OK** or **NEXT**.

Step 11: A File Save box will appear. **Click SAVE**.

Step 12: You are now ready to view the data from your recording. To illuminate the chart you must **click on any of the channel buttons** at the top of the screen.

UPLOADING AND VIEWING YOUR RECORDING
(DATA CARTRIDGE METHOD)

Once you have taken a recording you will want to see your data. The V series recorders can transfer their recorded data to your computer by two methods, either direct connection with a serial cable, or by using a data cartridge. If your system has been set up to transfer the information using a data cartridge follow the instructions outlined below:

Step 1: Be sure that the **power to the onboard recorder is Off**.

Step 2: Plug your data cartridge into the onboard recorder.

Step 3: Turn the power ON to the data logger. The data cartridge LED will glow for several seconds and the go out. After a few seconds the LED will begin to flash intermittently at a steady rate. This indicates that the data has been transferred into the data cartridge.

Step 4: Turn the power Off to the data logger. Do not remove the cartridge before turning the power off.

Step 5: Remove the data cartridge from the onboard recorder.

Step 6: Plug the cartridge into the USB Reader that is attached to your PC.

Step 7: With the Racepak program open on your PC **Select the NEW UPLOAD icon** on the toolbar.

Step 8: The Select Configuration box will appear. **Select configuration** for your recorder. For example: V300-1001. This number is a combination of the type of recorder you have (V300) and your recorder's serial number (a four digit number, such as 1001).

Step 9: Click OK.

Step 10: The system will now start uploading the data from the data cartridge to the PC. When the transfer is complete **Click OK.**

Step 11: The Session Selection box will now appear. **Click on the appropriate selections in the Session box** to identify the run. If the proper track and year are not listed, type the correct information directly into the top of their respective boxes.

Step 12: When finished select **OK** or **NEXT**.

Step 13: Depending on your configuration other selection boxes may appear. Fill in the information in those boxes and select **OK** or **NEXT**.

Step 14: A File Save box will appear. **Click SAVE**.

Step 15: You are now ready to view the data from your recording. To illuminate the graph chart you must **click on any of the channel buttons** at the top of the screen.

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.
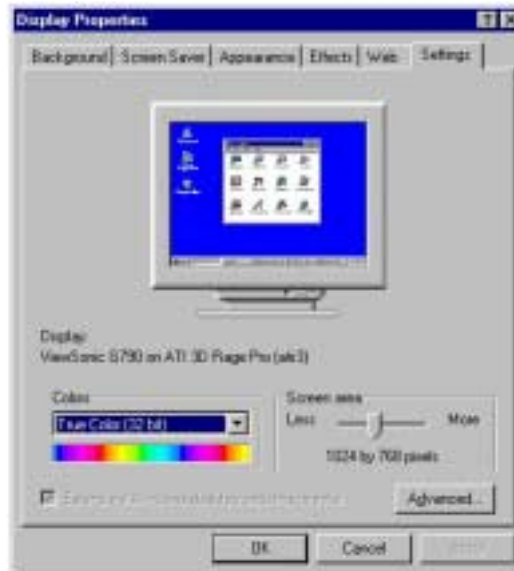
SETTING THE YEAR AND TRACK DATA ON SESSION PAGE

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: V300S-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 bet 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 longitudinal 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.

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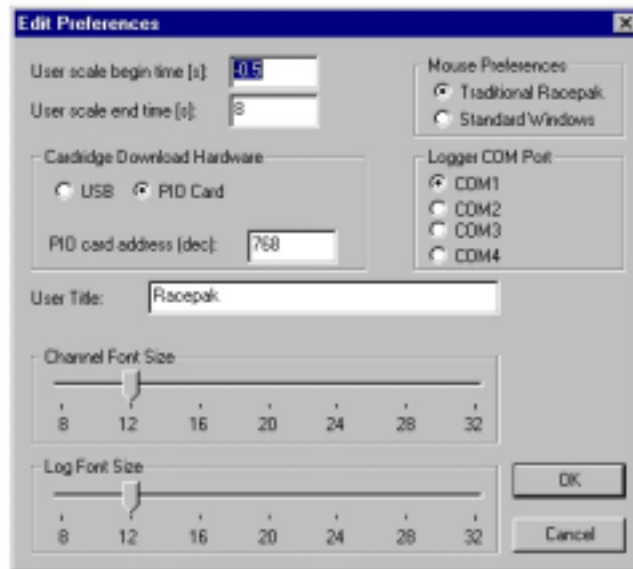
Step 2: From the Edit Preferences dialog box locate the User Title: window. You can change the name that appears on the graph screen by **highlighting the window and typing in the name you wish to appear**.

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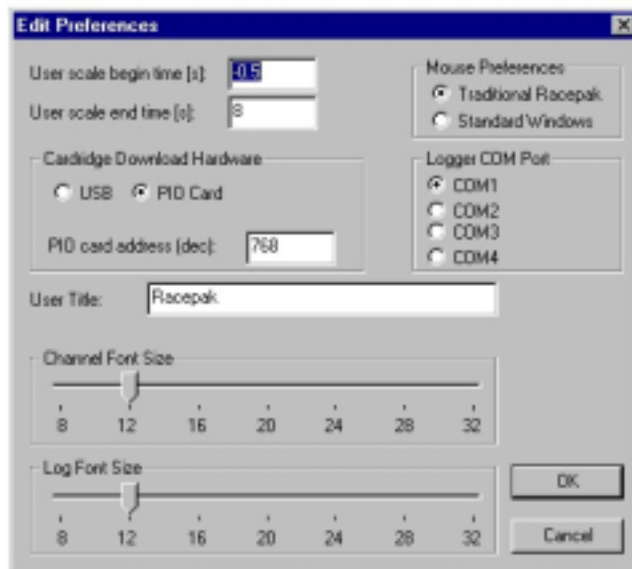
Step 3: At the bottom of the Edit Preference box are two scroll bars, one for Channel Font Size and the other for Log Font Size. **Move the scroll tabs** on either scale to the desired font size to change the size of the channel buttons or the text on the log pages.

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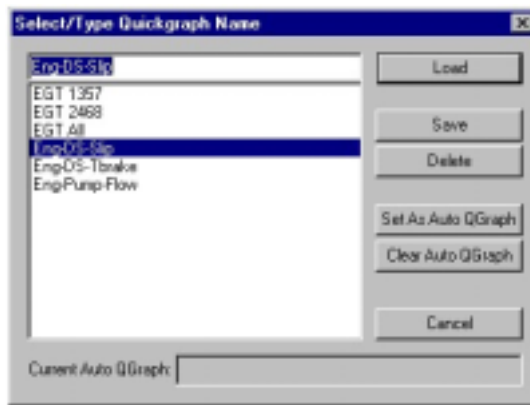
Step 4: Click on the top window of the Select/Name Quickgraph Name box.

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 V300S or V500. For your information the 'S' refers to one that is 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 V300S). 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. 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: Select your recorder configuration (example: V300-1001, your model recorder and it's serial number). 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.

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).
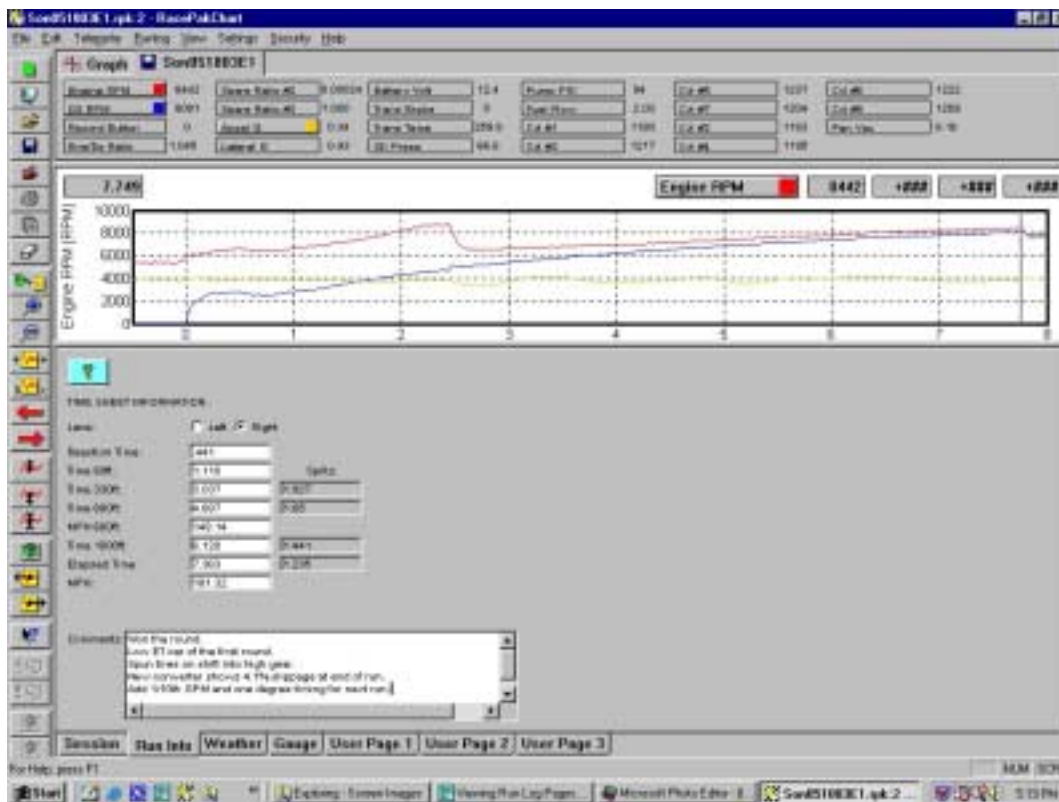
OVERLAYING RUN FILES

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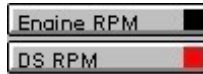
Step 3: **Click on the Open File Folder icon**.

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 it's tab will be placed alongside the first file's tab at the top of the screen.
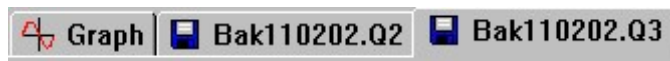
Step 5: Click on the same channel buttons in the second file as you illuminated in the first file. This will display the identical channel graphs for both files on the screen. You may now add or remove channels from the screen, but remember that you can only manipulate the file whose file tab is forward 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.

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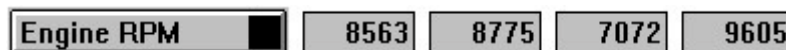
Window 1 (8563): The numeric value of the active channel at the cursor's present location.

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.

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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:

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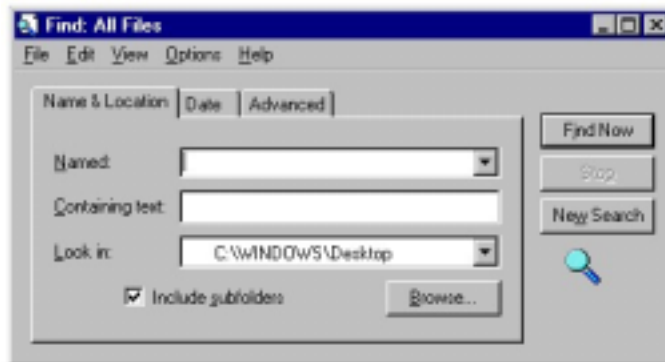
Step 4: In the Find: All Files box **click on the Name and Location tab** if it isn't already selected.

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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