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Coding Information

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Title: How To Get A Helios Capture

Applies To: All 1939 and 1708 multiplexed trucks

Change Log

Please refer to the change log text box below for recent changes to this article:

06/27/2017 - Added information stating the file must be zipped when adding to a case file. Figure 8.
 03/10/2017 - Edited coding so article can be viewed by Fleets as well.
 10/04/2016 - Added a link to the EZTech Download Center where Helios for 500k can be downloaded to an EZ-Tech. Updated Step 5 to explain you have to select the baud rate when using Helios for 500k.
 02/22/2016 - Revised layout to allow steps to be followed in order based on dealer feedback. Separated article into two sections. Obtaining a Helios capture and using Helios as a diagnostic tool.

Description

Helios is a java based diagnostic tool that will allow you to view all data link messages on 500k J1939, 250k 1939 and 1708 data links. What follows is step by step on how to:

- Obtain a Helios Capture in Vector Format to attach to a case file.
 - The Helios capture must be zipped to add to the case file.
- Use Helios as a diagnostic tool to view Signals, Faults and more.

NOTE:

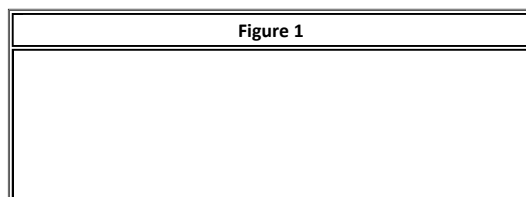
Helios is not an effective sniffer. When a module stops communicating it does not "drop off" the sniffer, it stops counting. This can make it difficult to understand if a module is no longer communicating.

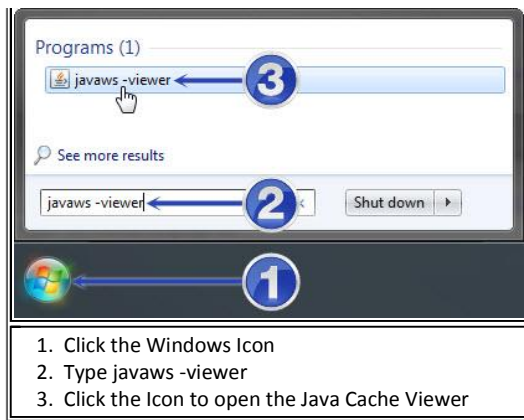
Obtaining a Helios Capture in Vector Format

- Helios is now available for 500k Baud J1939. You can download the program by going to [IK2700065 - EZTech Download Center](#). Helios for 500k is item E22 in the Download Center.
 - This version of Helios for 500k works for 500k baud rate vehicles and 250k buad rate vehicles. You will need to select the correct baud rate from the Tools Menu for the vehicle you are working on.

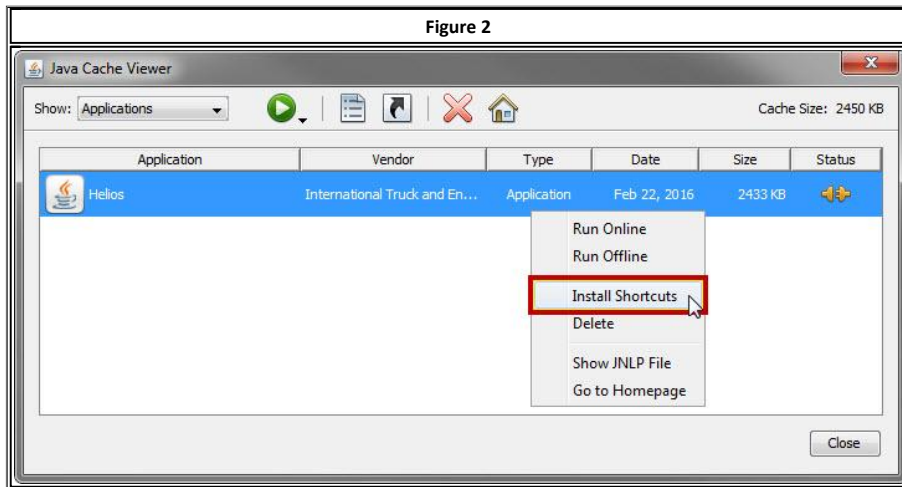


- If a shortcut to the program like this does not appear on your desktop you will have to run the Java viewer to add the shortcut to your desktop.
- If the Helios Icon is not on your desktop, click Windows - Type "javaws -viewer" and click the icon (Figure 1)

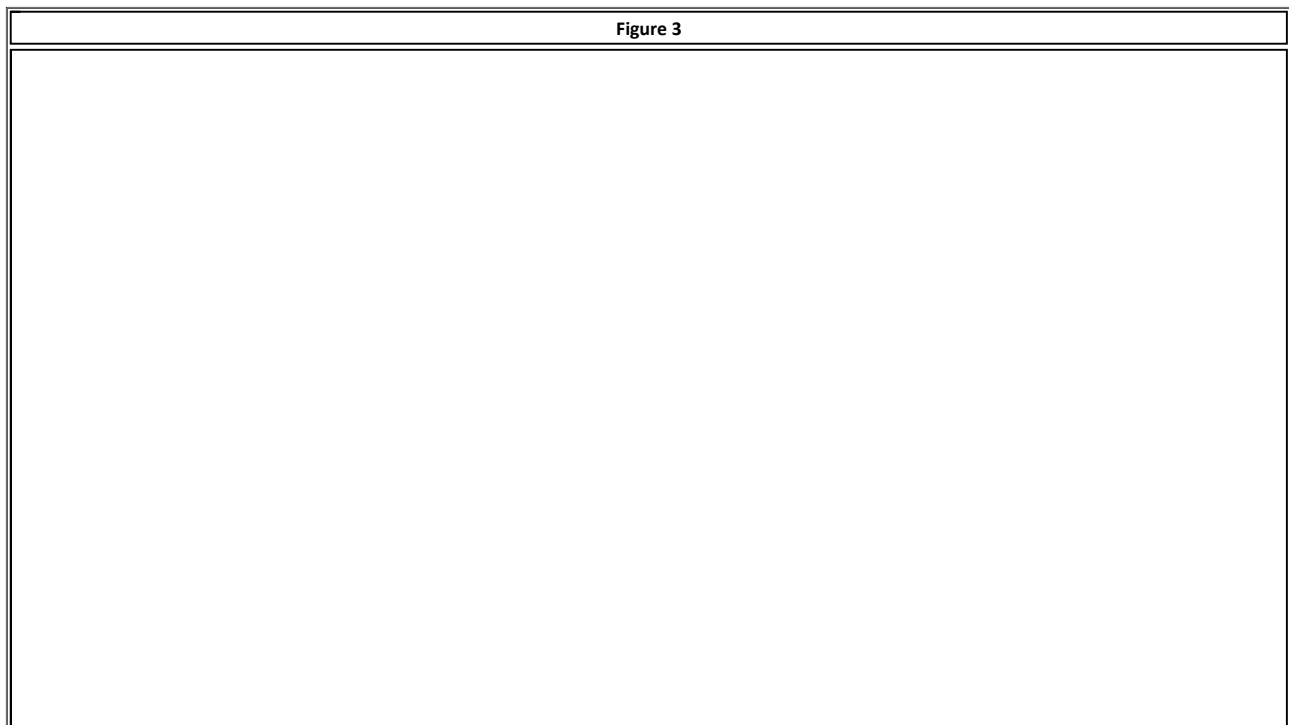


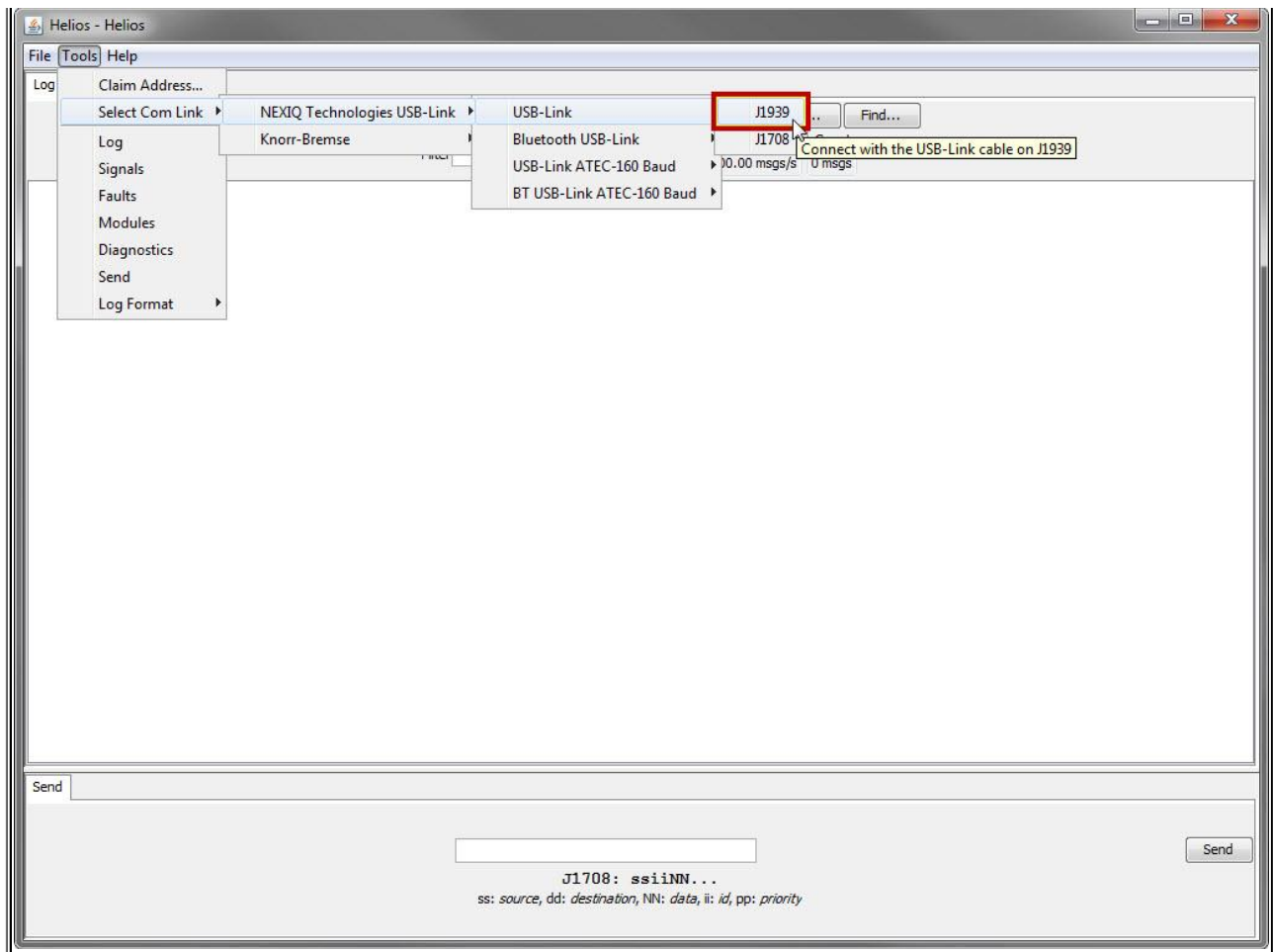


4. You can create a shortcut to your desktop (Figure 2) or launch the program from the "Java Cache Viewer"



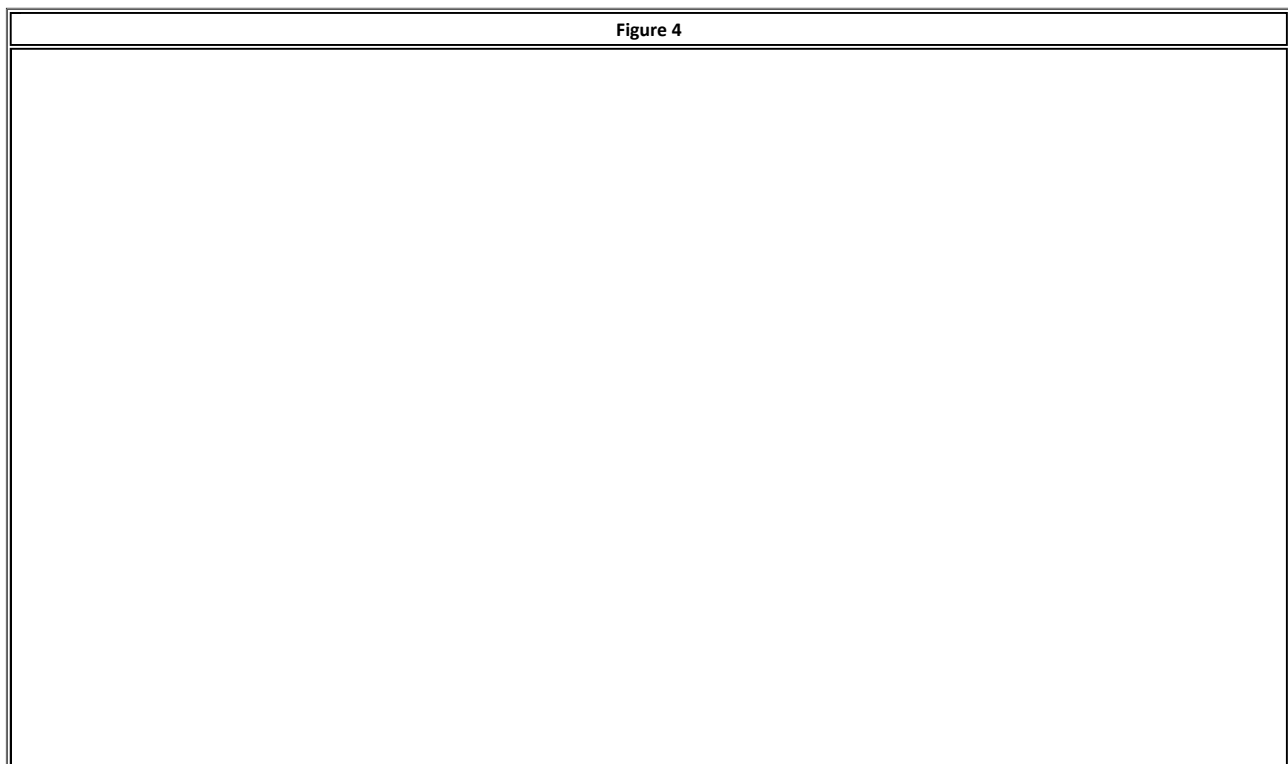
5. Helios will connect and start automatically if you've used it before, and the default format is "Helios Format". If you have not used Helios before, or you are using a different com link, you will need to select your com link from the Tools menu. - Figure 3. If you are using Helios for 500k you will need to select the baud rate you want to record.

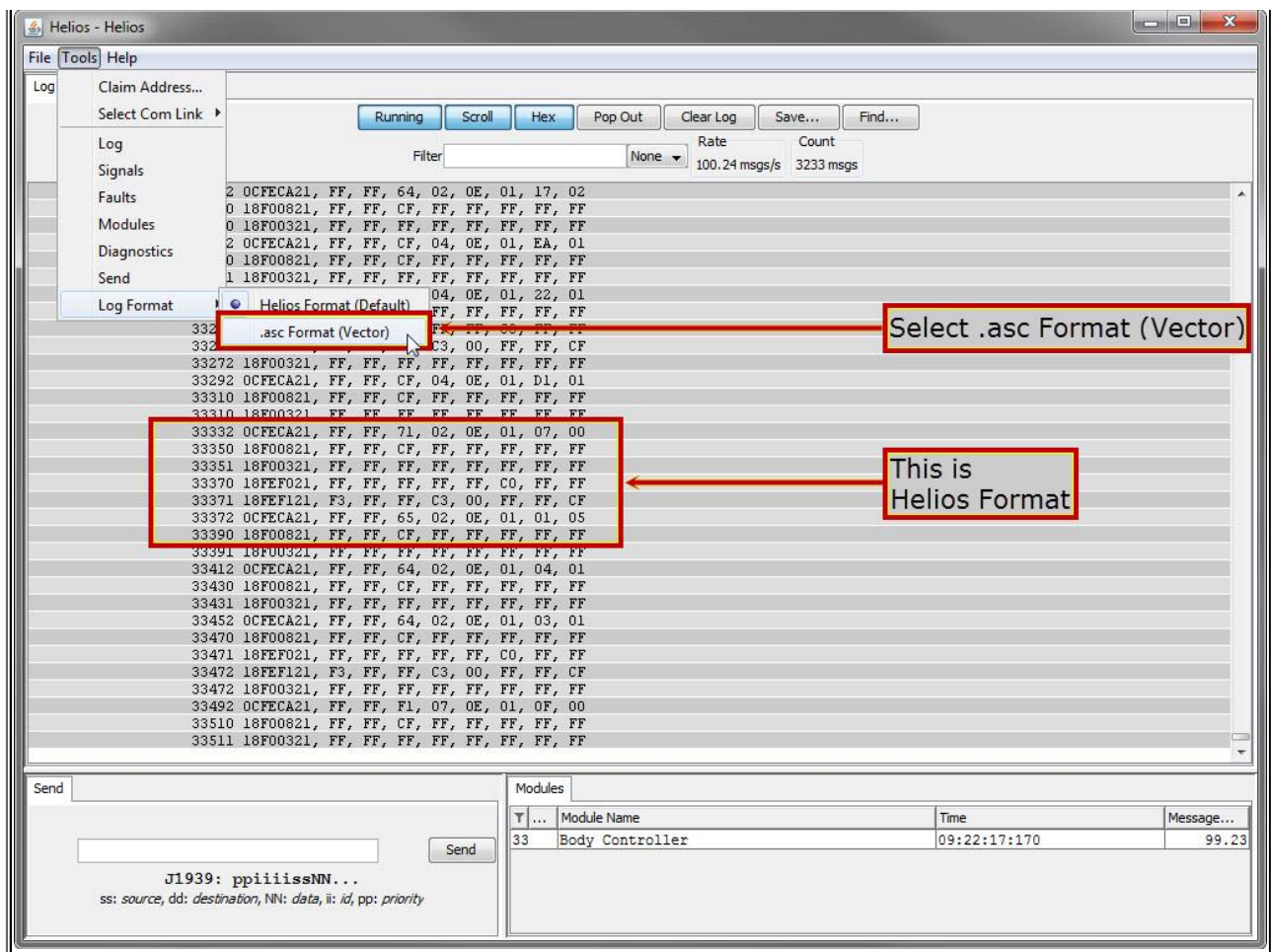




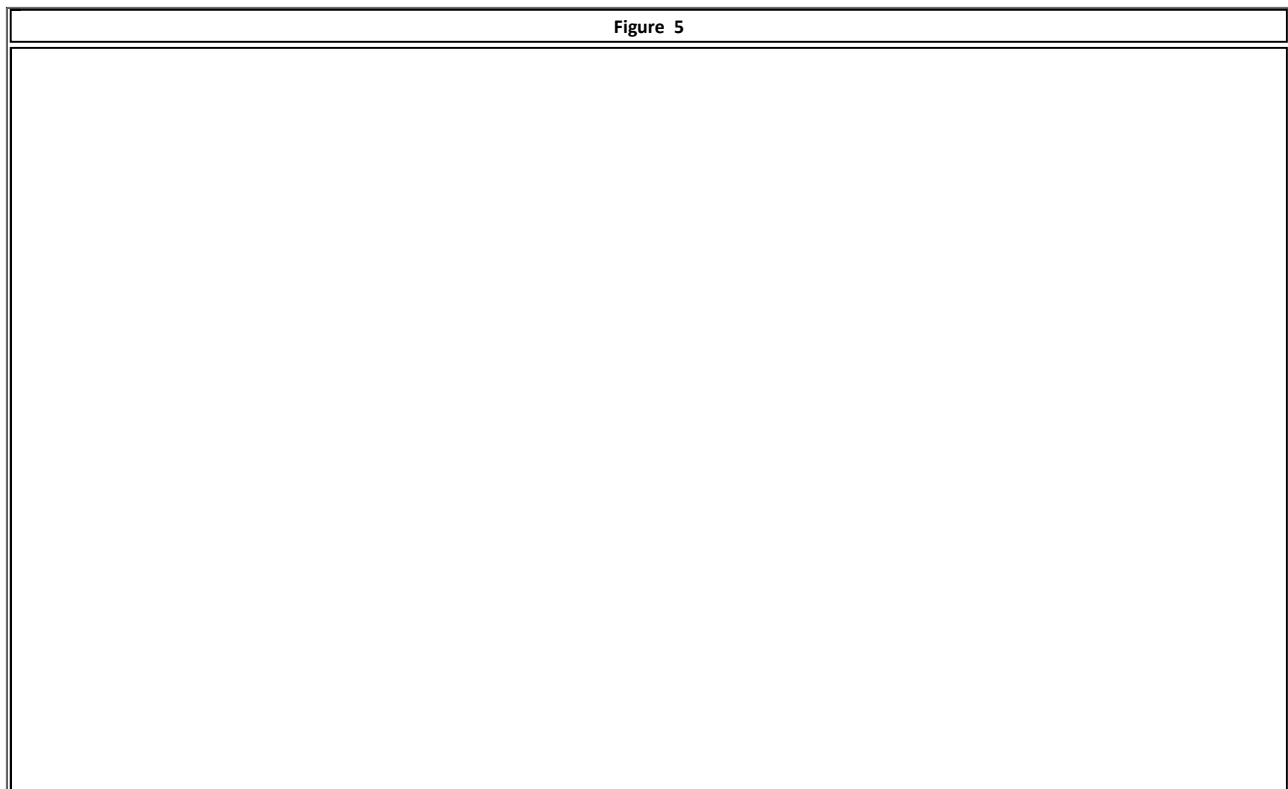
6. Change the format to .asc Format (Vector) - Figure 4

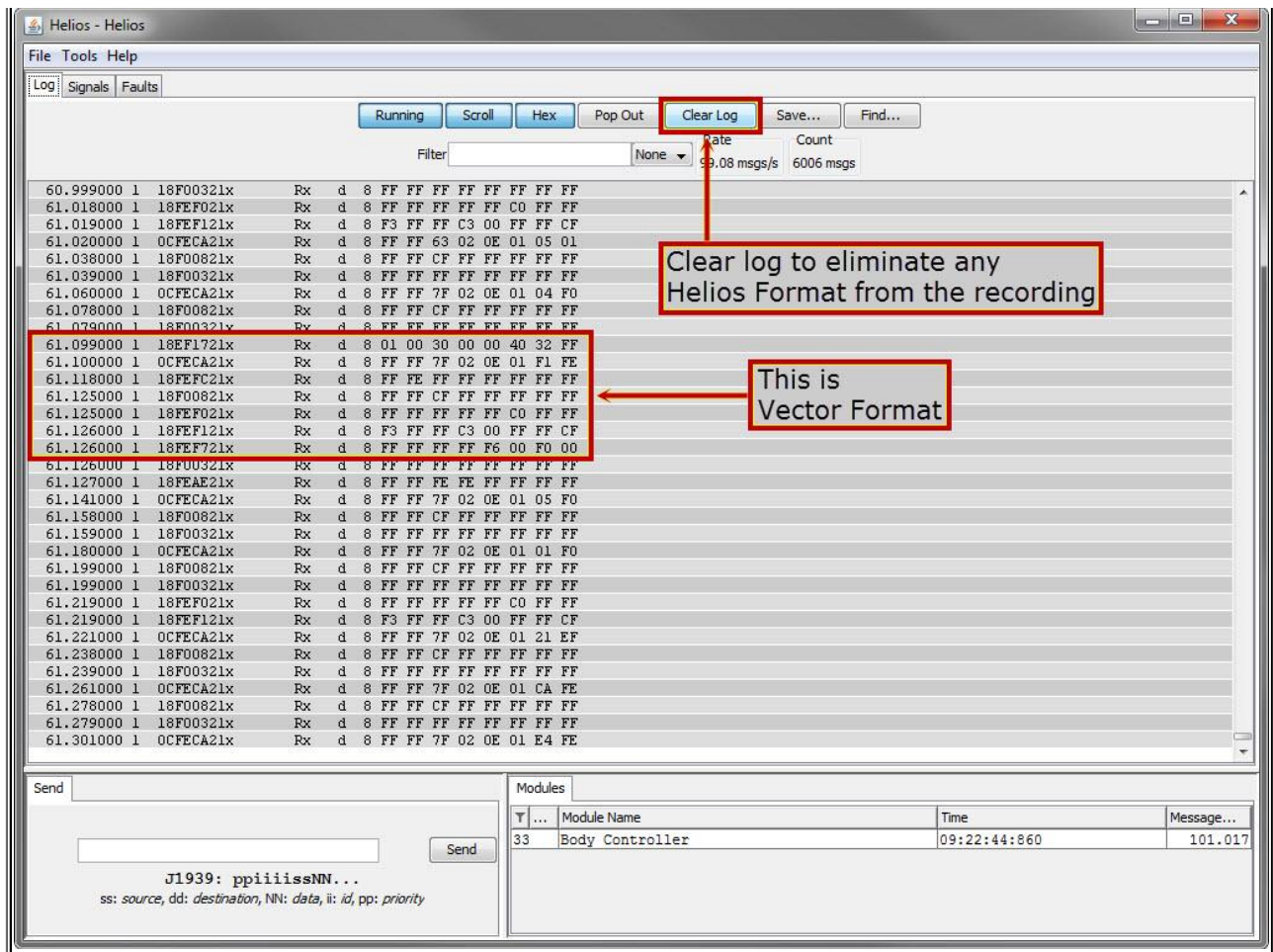
- In order to avoid delays on the case file, this step is very important so the file can be played back reliably.



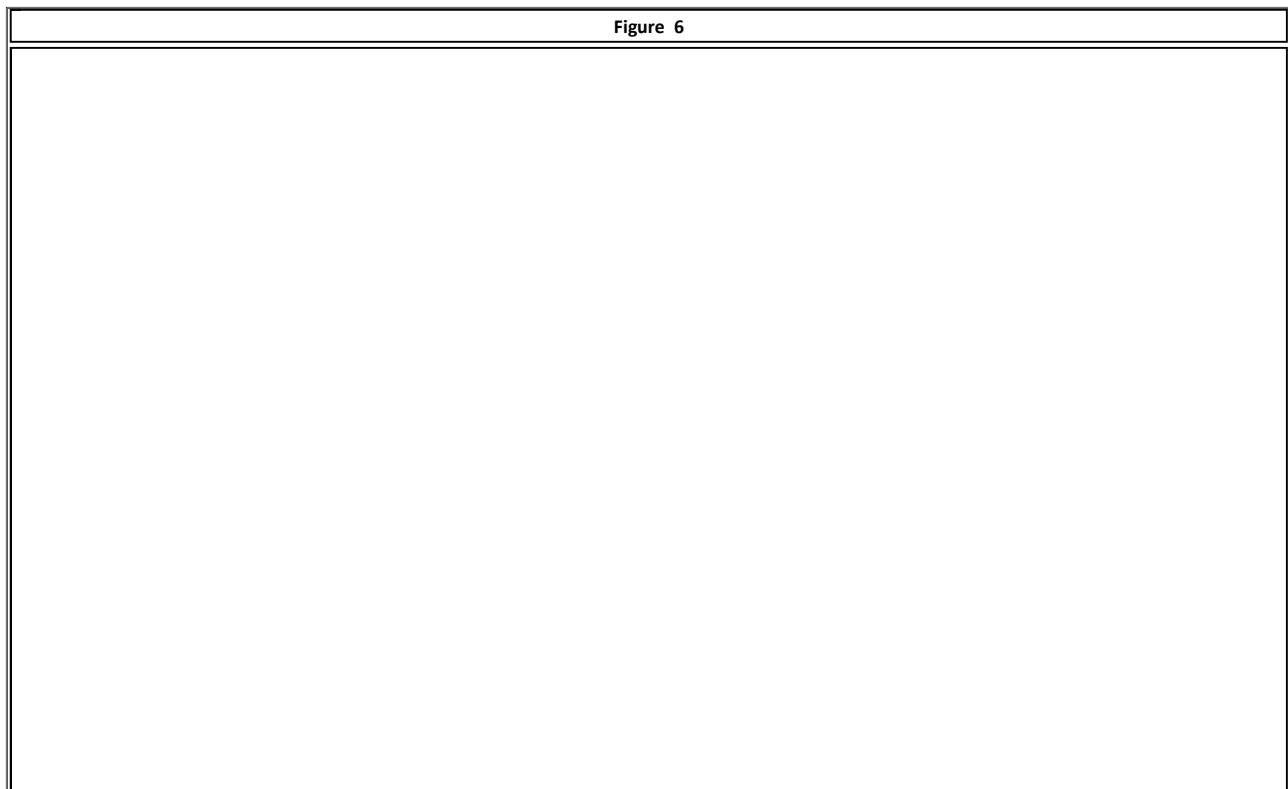


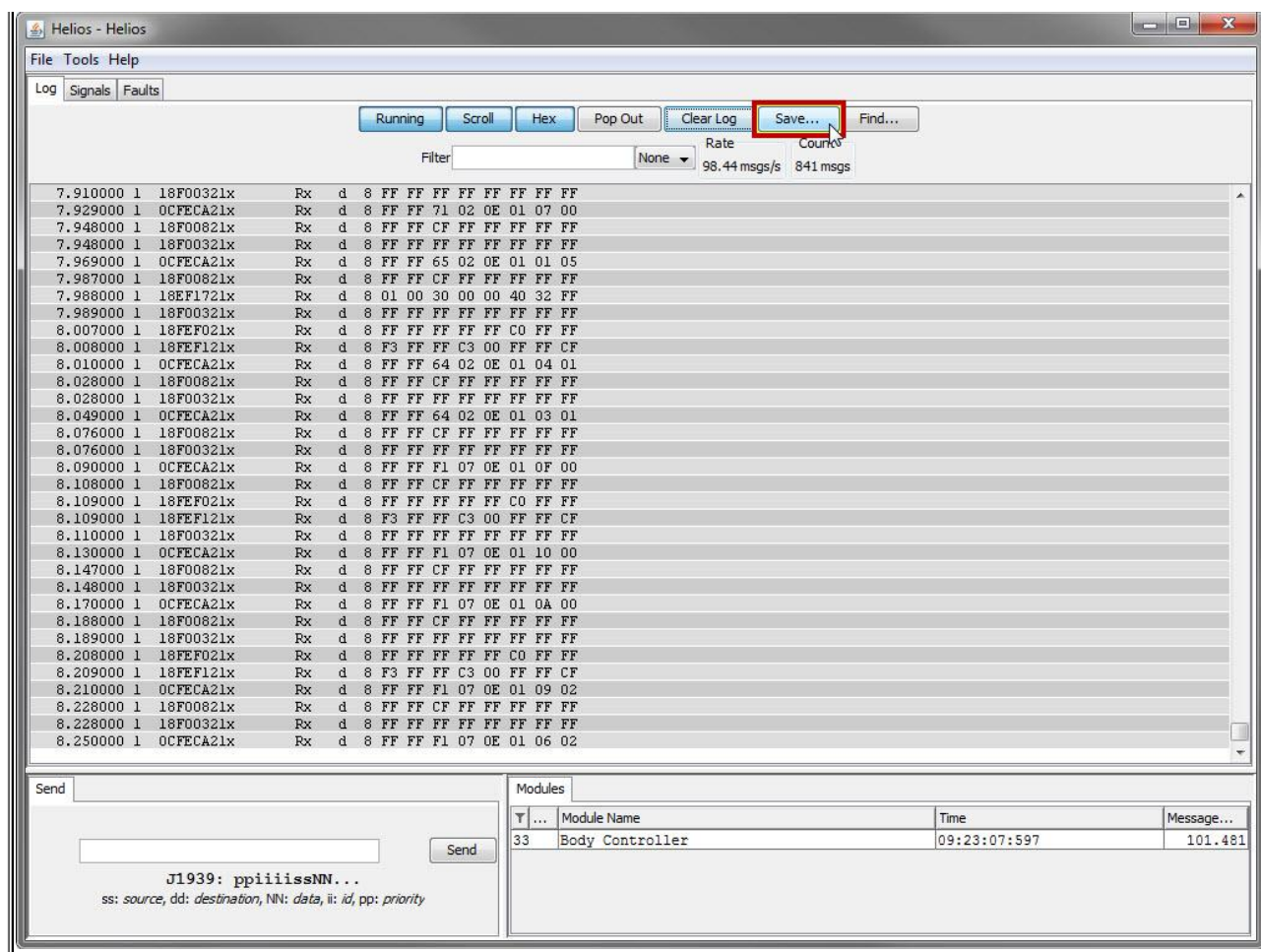
7. Clear the log file to prevent having both formats mixed together. - Figure 5



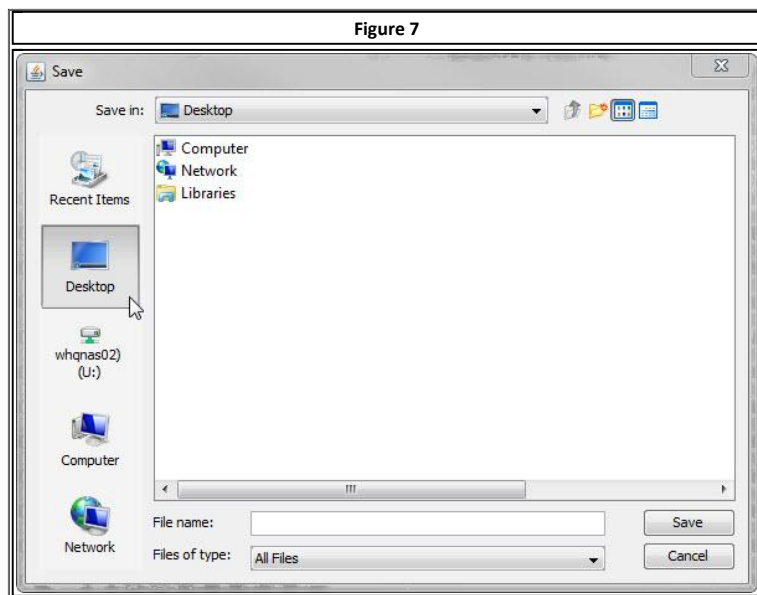


8. Once you have the data you need, save the file. - Figure 6

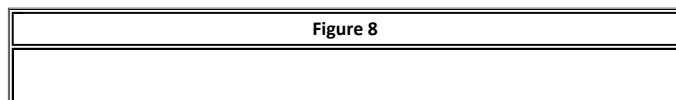


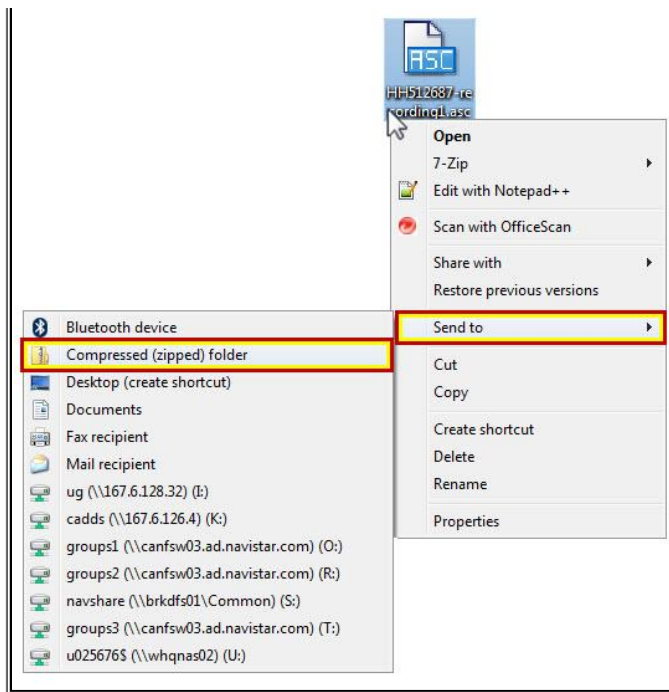


9. Saving the file to your desktop will make it easy to find so you can upload the capture to your case file. - Figure 7



10. You will need to compress (zip) the file so it can be attached to your case file.
 ◦ The file cannot be opened from the case file if it is not zipped.





Using Helios to View Signals or Faults

- Helios can also be used to view Signals, Faults, Modules Communicating and a Diagnostic Tab

Figure 9 - Signals Tab

Helios - Helios

File Tools Help

Log Signals Faults

Name	Source	Module	Value	Units	Description
Manufacturer Specific Information (PropA_PDU1)	21	PGN	Not Available	No Units	
Two Speed Axle Switch	21		Not Available	No Units	Switch signal which ...
Parking Brake Switch	21	SPN	Parking brake set	No Units	Switch signal which ...
Wheel-Based Vehicle Speed	21	Name	Not Available	mph	Speed of the vehicle...
Cruise Control Set Speed	21	Source	Not Available	mph	Value of set (chosen...
Cruise Control States	21		Not available	No Units	This parameter is us...
Cruise Control Active	21	Module	Not Available	No Units	Cruise control is sw...
Cruise Control Enable Switch	21	Value	ise control disabled	No Units	Switch signal which ...
Brake Switch	21	Units	ake pedal depressed	No Units	Switch signal which ...
Clutch Switch	21	Description	Not Available	No Units	Switch signal which ...
Cruise Control Set Switch	21		ise control activ...	No Units	Switch signal of the...
Cruise Control Coast (Decelerate) Switch	21	Raw Value	ise control activ...	No Units	Switch signal of the...
Cruise Control Resume Switch	21	Raw Unit	0	No Units	Switch signal of the...
Cruise Control Accelerate Switch	21	Data	ise control activ...	No Units	Switch signal of the...
Engine Test Mode Switch	21		Off	No Units	Switch signal which ...

Priority ID Source

06 FFFFFFFFFFFFFFFF F9

Send

J1939: pp1111ssNN...

ss: source, dd: destination, NN: data, ii: id, pp: priority

Modules Diagnostics

Module Name	Active Fault...	Malfunction ...	Red Stop La...	Amber War...	Protect Lamp	Last Fault S...
Body Controller	7	Off	Off	Off	Off	12:13:26

- The Signals Tab allows you to view live data as it is broadcast on the data link.
- You can customize the view by right clicking on the header bar (as shown) and selecting the items you wish to see or hide.
 - Please note the Source is a Hexadecimal value. Converting 21 from Hexadecimal to Decimal gives you 33 (Body Controller)

Figure 10 - View or Clear Faults

Helios - Helios

File Tools Help

Log Signals **Faults**

T	SPN	FMI	Type	Module	Message
	611	14		Body Controller	FET 1 is under current
	612	14		Body Controller	Analog channel 0 has an unknown fault.
	613	14		Body Controller	HVAC Control Head air inlet fault
	625	14		Body Controller	Front Passenger Door Module (address 64) not communicating with the ESC
	639	14		Body Controller	2010 Gauge Cluster is not communicating (PGN 59904) with the ESC or EZ-TECH Diagnostic Too...
	1231	14		Body Controller	Unknown module with address 0 not communicating with the ESC.
	2033	14		Body Controller	Relay driver channel #0 has a load but is configured as unused.

Clear DTCs

Send

J1939: ppiiiissNN...

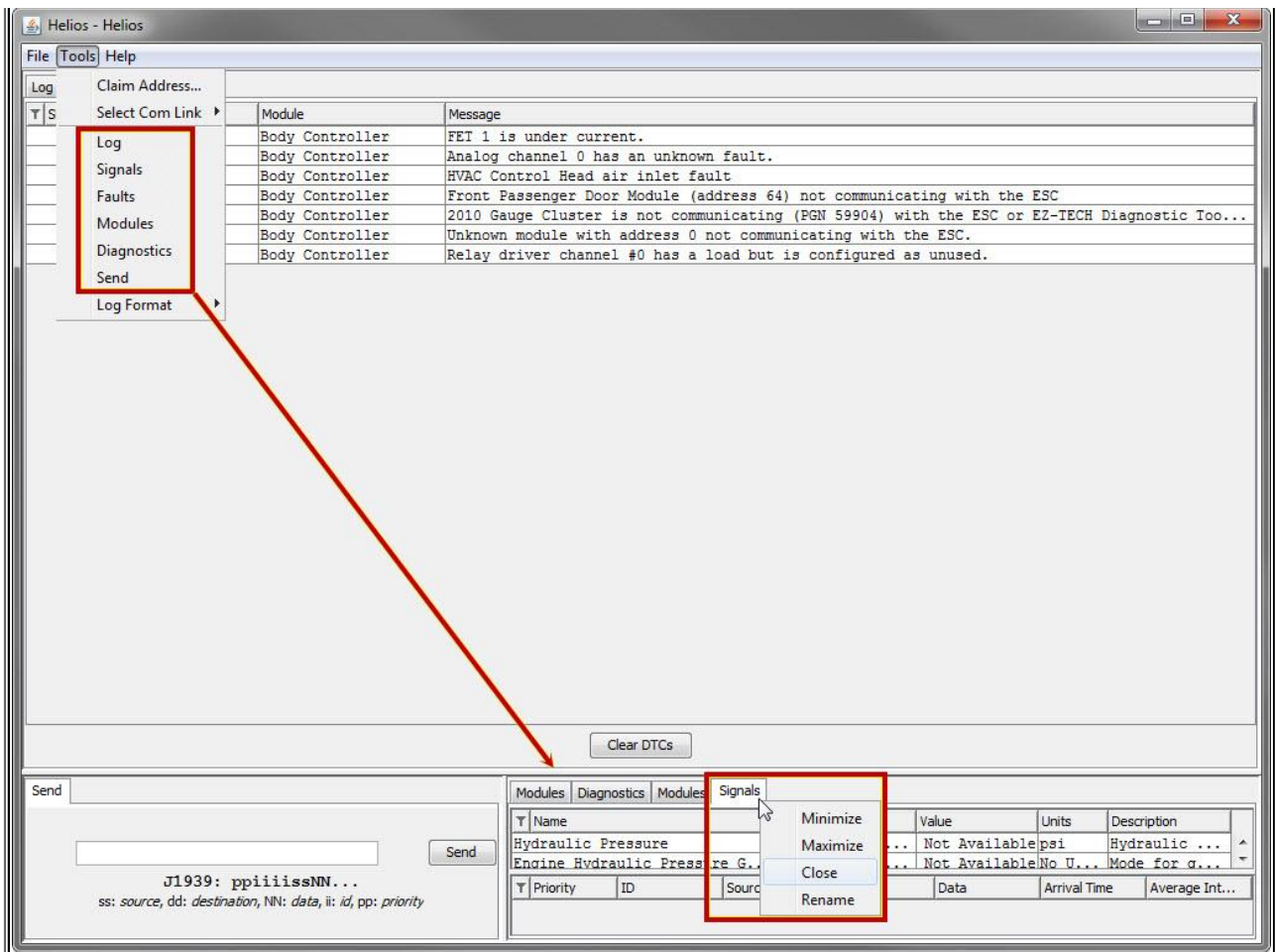
ss: source, dd: destination, NN: data, ii: id, pp: priority

Modules

T	...	Module Name	Time	Message...
33		Body Controller	11:56:39:468	99.158
249		Off Board Diagnostic-Service Tool	09:25:42:365	32.912

◦ You can view and clear faults in the Faults Tab

Figure 11 - Using the Tools Menu



- Use the Tools Menu to view different information.
- A new tab will be opened with the information you requested.
- Right click on any tab to change or close the tab.
 - You can change or close any tab on the screen.

Figure 12 - Diagnostics Tab

The screenshot shows the Helios - Helios software interface. The top menu bar includes File, Tools, and Help. Below the menu bar are tabs for Log, Signals, and Faults. The Signals tab is active, displaying a table of signals.

Name	Source	Module	Value	Units	Description
Manufacturer Specific Information (PropA_PDU1)	21	Body Controller	Not Available	No Units	
Two Speed Axle Switch	21	Body Controller	Not Available	No Units	Switch signal which ...
Parking Brake Switch	21	Body Controller	Parking brake set	No Units	Switch signal which ...
Wheel-Based Vehicle Speed	21	Body Controller	Not Available	mph	Speed of the vehicle...
Cruise Control Set Speed	21	Body Controller	Not Available	mph	Value of set (chosen...
Cruise Control States	21	Body Controller	Not available	No Units	This parameter is us...
Cruise Control Active	21	Body Controller	Not Available	No Units	Cruise control is sw...
Cruise Control Enable Switch	21	Body Controller	Cruise control disabled	No Units	Switch signal which ...
Brake Switch	21	Body Controller	Brake pedal depressed	No Units	Switch signal which ...
Clutch Switch	21	Body Controller	Not Available	No Units	Switch signal which ...
Cruise Control Set Switch	21	Body Controller	Cruise control activ...	No Units	Switch signal of the...
Cruise Control Coast (Decelerate) Switch	21	Body Controller	Cruise control activ...	No Units	Switch signal of the...
Cruise Control Resume Switch	21	Body Controller	0	No Units	Switch signal of the...
Cruise Control Accelerate Switch	21	Body Controller	Cruise control activ...	No Units	Switch signal of the...
Engine Test Mode Switch	21	Body Controller	Off	No Units	Switch signal which ...

Below the signals table is a table with columns: Priority, ID, Source, Module, Data, Arrival Time, and Average Interval.

Priority	ID	Source	Module	Data	Arrival Time	Average Interval
06	FFFFFFFFFFFFFF	F9	Off Board Diagnos...	, D3, FE, 00	09:25:42:365	851

At the bottom of the interface, there is a Send button and a text input field. Below the input field, the text "J1939: ppiliissNN..." is displayed, followed by a legend: "ss: source, dd: destination, NN: data, ii: id, pp: priority".

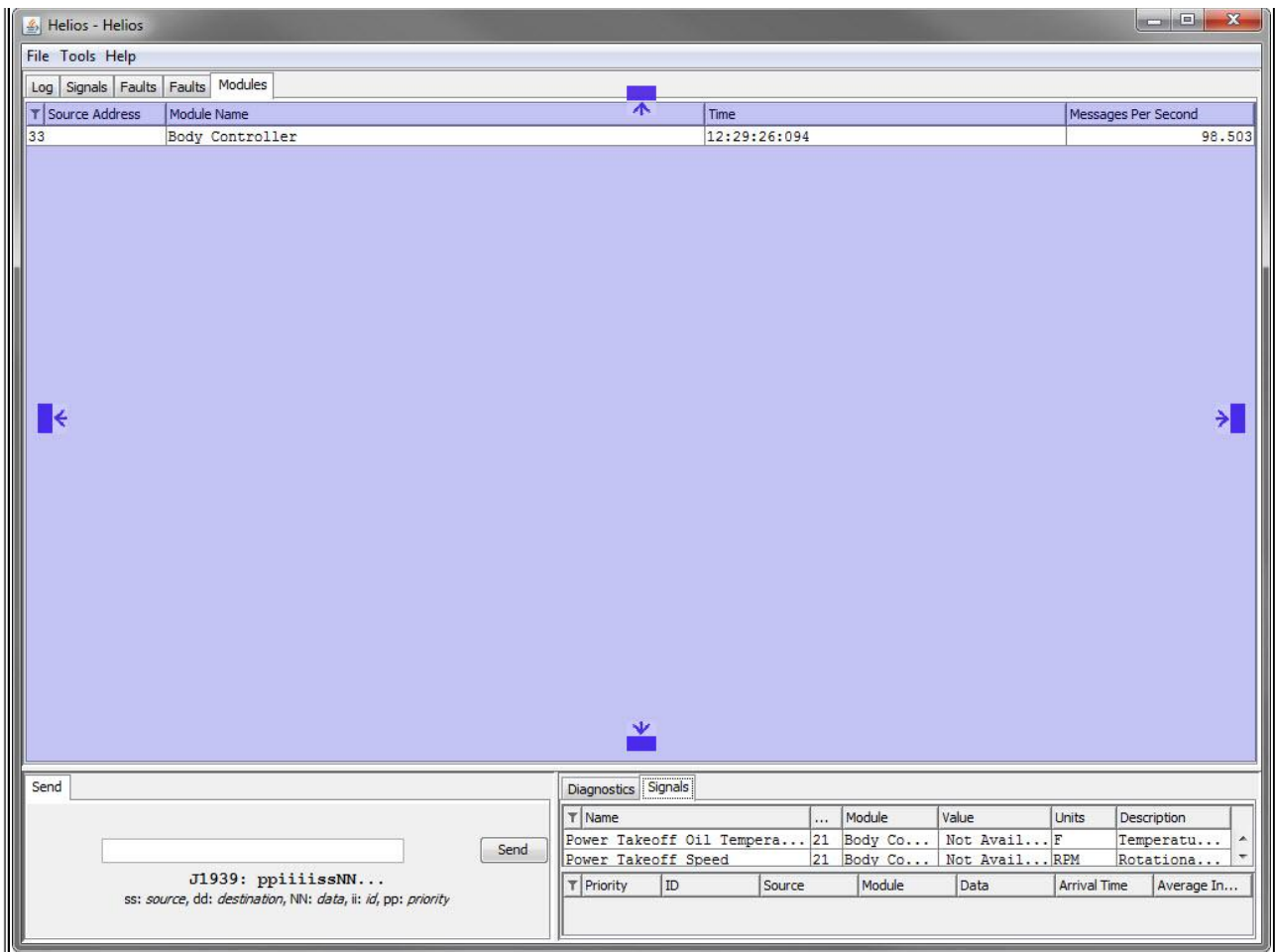
To the right of the Send button is a tabbed interface. The "Diagnostics" tab is selected and highlighted with a red box. It contains a table with columns: Module Name, Active Fault..., Malfunction ..., Red Stop La..., Amber War..., Protect Lamp, and Last Fault S...

Module Name	Active Fault...	Malfunction ...	Red Stop La...	Amber War...	Protect Lamp	Last Fault S...
Body Controller	7	Off	Off	Off	Off	12:13:26

Below the screenshot, there are two bullet points:

- The Diagnostic Tab gives a useful overview of the modules.
- It can show which module is turning a cluster warning lamp on.

Figure 13 - Moving Tabs



- Left Click and Drag a Tab to various locations on the screen.
- This allows you to view full screen if desired, or organize the tabs.

Figure 14 - Example of Tabs Moved for Viewing

The screenshot shows the 'Helios - Helios' application window. It has a menu bar with 'File', 'Tools', and 'Help'. Below the menu bar are two tabs: 'Signals' and 'Diagnostics'. The 'Signals' tab is active, displaying a table with the following data:

Module Name	Active Fault Count	Malfunction Indicator Lamp	Red Stop Lamp	Amber Warning Lamp	Protect Lamp	Last Fault Sent:
Body Controller	7	Off	Off	Off	Off	12:39:50

Below the table is a large empty rectangular area. At the bottom of the window, there is a 'Send' button and a text input field. The input field contains the text 'J1939: ppiiiissNN...' and a legend below it: 'ss: source, dd: destination, NN: data, ii: id, pp: priority'.

Hide Details

Feedback Information

Viewed: 4403

Helpful: 36

Not Helpful: 3

No Feedback Found