



GEN4 PRO XTREME BigComm Pro Project Setup Manual

www.BigStuff3.com

*To avoid problems reading this manual and using the Hyperlinks,
please download the latest version of Adobe Reader, free software available at www.adobe.com.*

1. INTRODUCTION

[Back to Table of Contents](#)

The GEN4 PRO XTREME system can be configured to operate on almost any engine configuration, normally aspirated; nitrous oxide injected, supercharged and turbocharged applications. BigStuff3 has partnered with EFI Analytics to refine the BigComm Pro software to work specifically with the GEN4 PRO XTREME systems. The BigComm Pro software is designed to measure, calibrate and record the engine parameters and acts as the graphical user interface between the GEN4 PRO XTREME ECU and the engine it is installed on. The BigComm Pro software allows the user extraordinary fuel, ignition and power management system tunability for improved performance and drivability.

The BigComm Pro software allows full user access to all of the Curves, Tables & Parameters needed to calibrate the GEN4 PRO XTREME system. Calibrations can be modified both “on-line” and “off-line”. The engine control Curves, Tables & Parameters are stored in the GEN4 PRO XTREME ECU non-volatile memory, allowing for the stored information not to be lost when power to the ECU is removed.

2. BIGCOMM PRO SOFTWARE DOWNLOAD OVERVIEW

[Back to Table of Contents](#)

The BigComm Pro (BCP) software can be downloaded directly from the www.BigCommPro.com website. It will require an internet connection to be established with the PC that the BCP software will be downloaded onto. It is assumed the PC is not connected to the GEN4 PRO XTREME ECU during the BigComm Pro software download.

The BCP software download package includes an example Project containing a demo calibration and preconfigured Dashboards and Tuning Tabs to help get you acquainted with the PCB software offline. This will be described in further detail in these instructions.

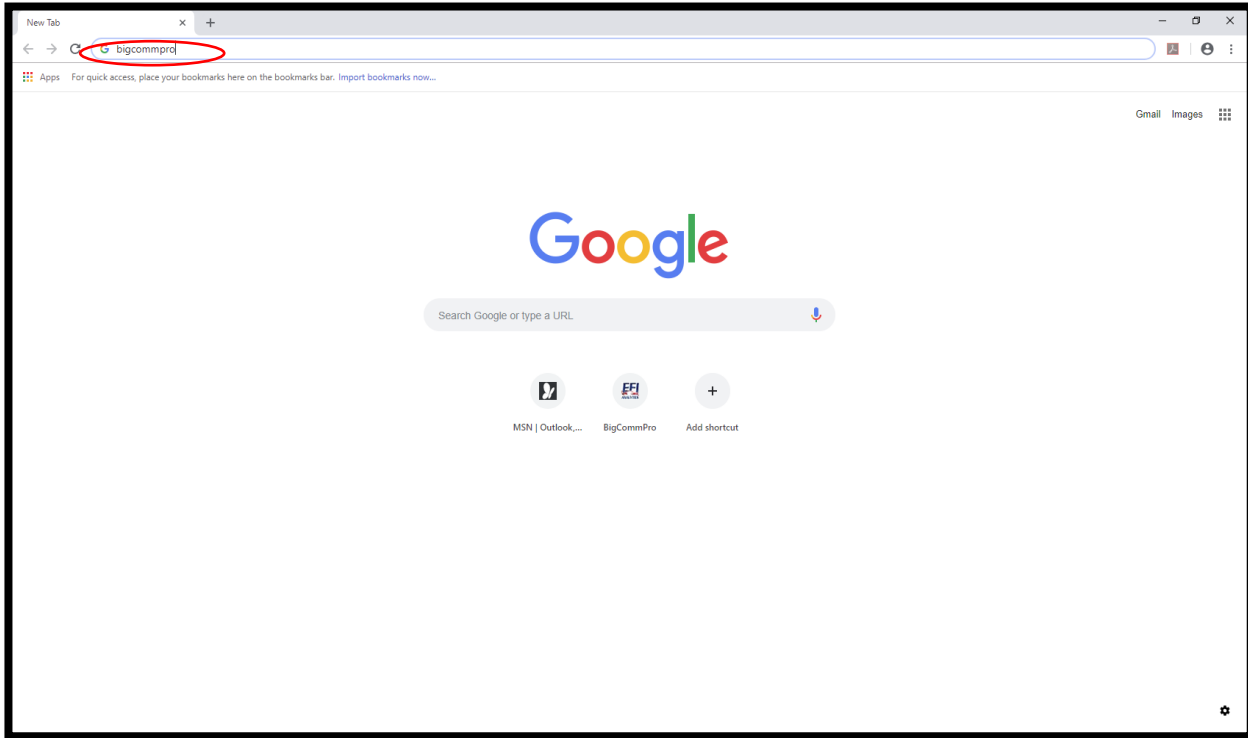
The minimum PC requirements to run the BigComm Pro GEN4 software are:

- Microsoft Windows XP, Vista, 7, 8, 10, OSX 10.6+, & Linux
- 1.6 GHz Intel Core i5 minimum.
- 8GB of RAM minimum. Ideally, 16+ GB RAM
- RJ45 Ethernet port recommended. A USB port can also be used with a USB-to-RJ45 Ethernet adapter (not included).

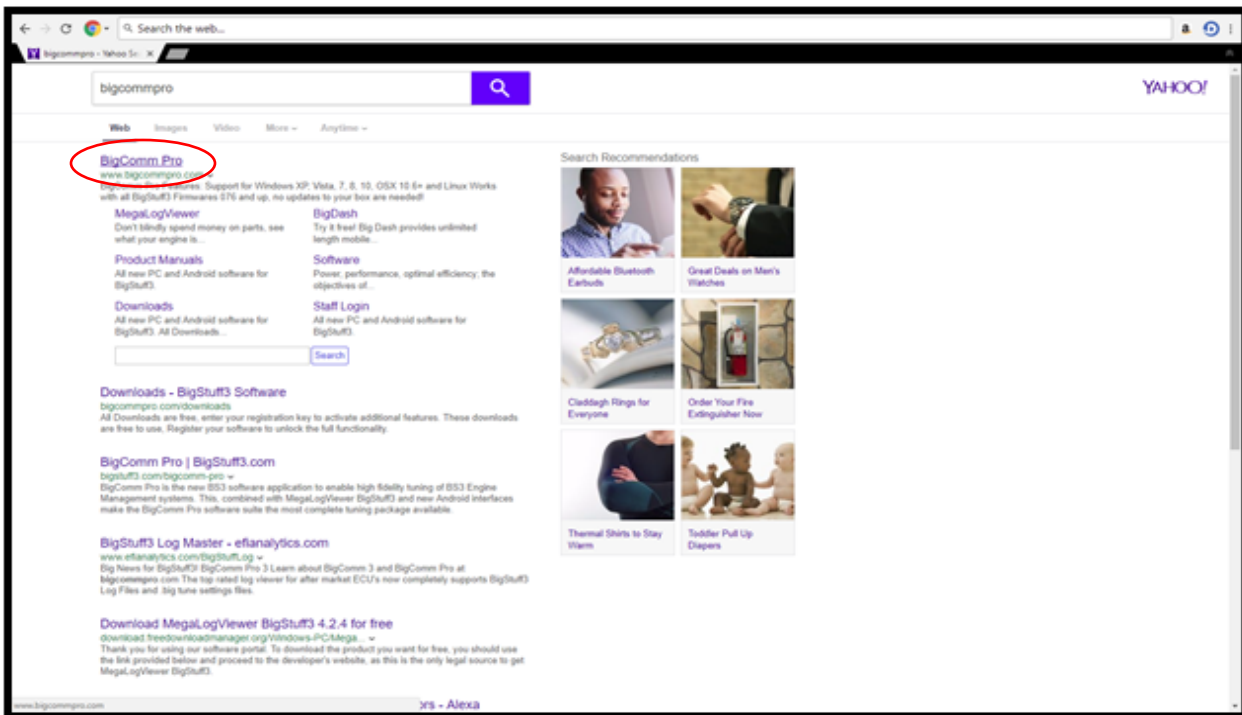
The following steps detail how to download the BigComm Pro software onto a PC.



Step 2.1 - With the PC connected to the internet, type **bigcommpro** into the web browser and hit enter. **At this point, the PC should not be connected to the GEN4 PRO XTREME ECU.**



Step 2.2 - Select **BigComm Pro**.



Step 2.3 - Once the www.BigCommPro.com home page opens, select **DOWNLOAD NOW**.

BIG NEWS FOR BIGSTUFF3!

BigStuff3 just got Simpler and more Powerful than ever!

When it comes to modern horsepower, the most important tools are no longer found in your toolbox. Just think, in the 1980's Top Fuel dragsters made about 2500 hp using a 500 cubic inch Aluminum Hemi headed engine on Nitromethane, some of today's Pro Mod cars crush these numbers! Why? It is a matter of optimizing all aspects of the engine to improve efficiency. This demands the tools to gather data to understand what is happening inside the engine at the completely and identify opportunities to improve efficiency. EFI has brought new capabilities to enable maximum efficiency, but also additional complexity getting started. Together BigComm Pro and MegaLogViewer bring you the power to capture, view and analyze vehicle data as your engine produces it, then act upon it. These easy to use applications simplify making changes and even offer recommendations and automatic correction using data analytics at a level that is not offered by any other automotive tuning solutions.

BIGCOMM PRO NOW AVAILABLE!

[DOWNLOAD NOW](#) [PURCHASE REGISTRATION](#)

- 1) Download the all new BigComm 3
- 2) Purchase a registration - Choose BigComm Pro Single if you only tune 1 BigStuff3 or BigComm Pro Tuner if you tune multiple BigStuff3 ECU's
- 3) Enter the registration in BigComm and all the BigComm Pro features will be activated!

Step 2.4 - Download the **BigComm Pro Beta for Gen 4** by selecting **Download**.

For Linux

BigComm Pro version 3 (Approximately 30 MB) [Download](#)

MegaLogViewer BigStuff Version 4.3.18 (3.5 MB) [Download](#)

Android

BigDash v 1.6.08 (6/13/2018) [Download](#)

Big Replay Upload 1.6.08 (6/13/2018) [Download](#)

BIG STUFF3 GEN4 PRO XTREME

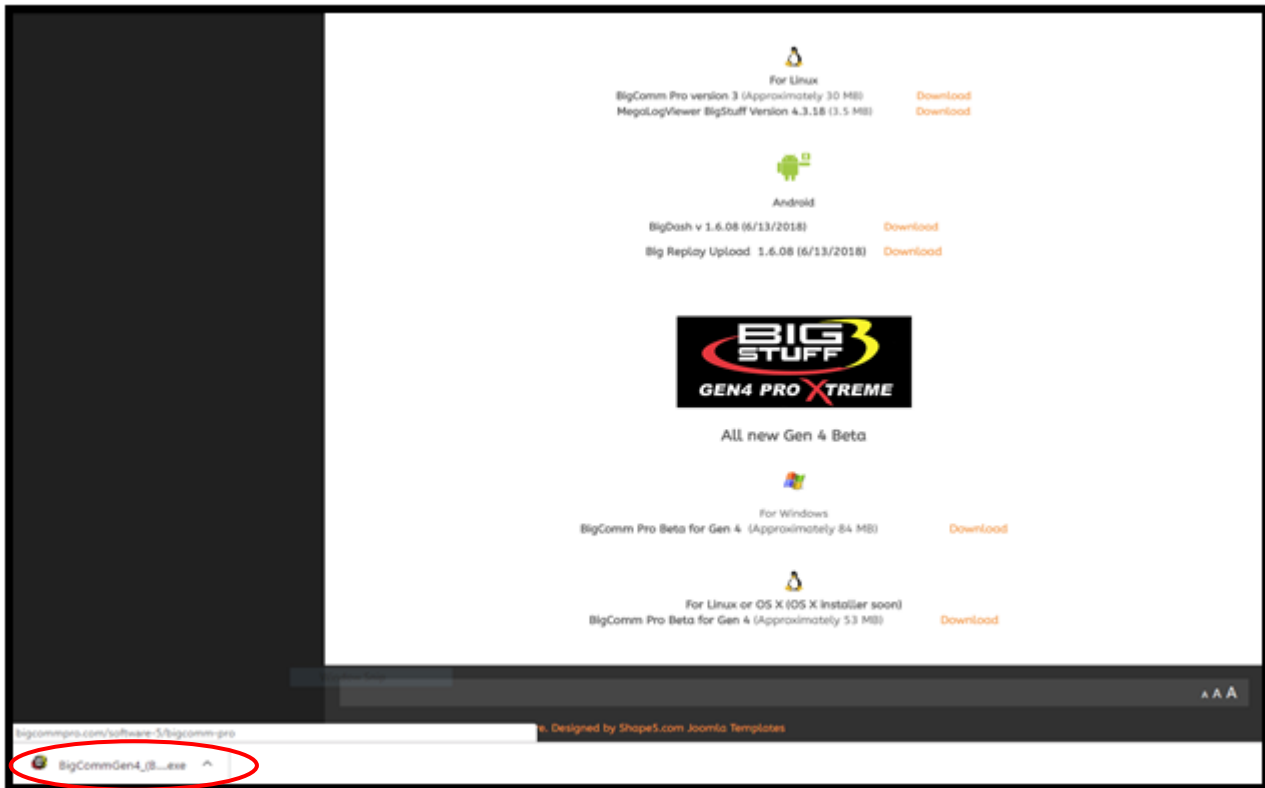
All new Gen 4 Beta

For Windows (approximately 84 MB) [Download](#)

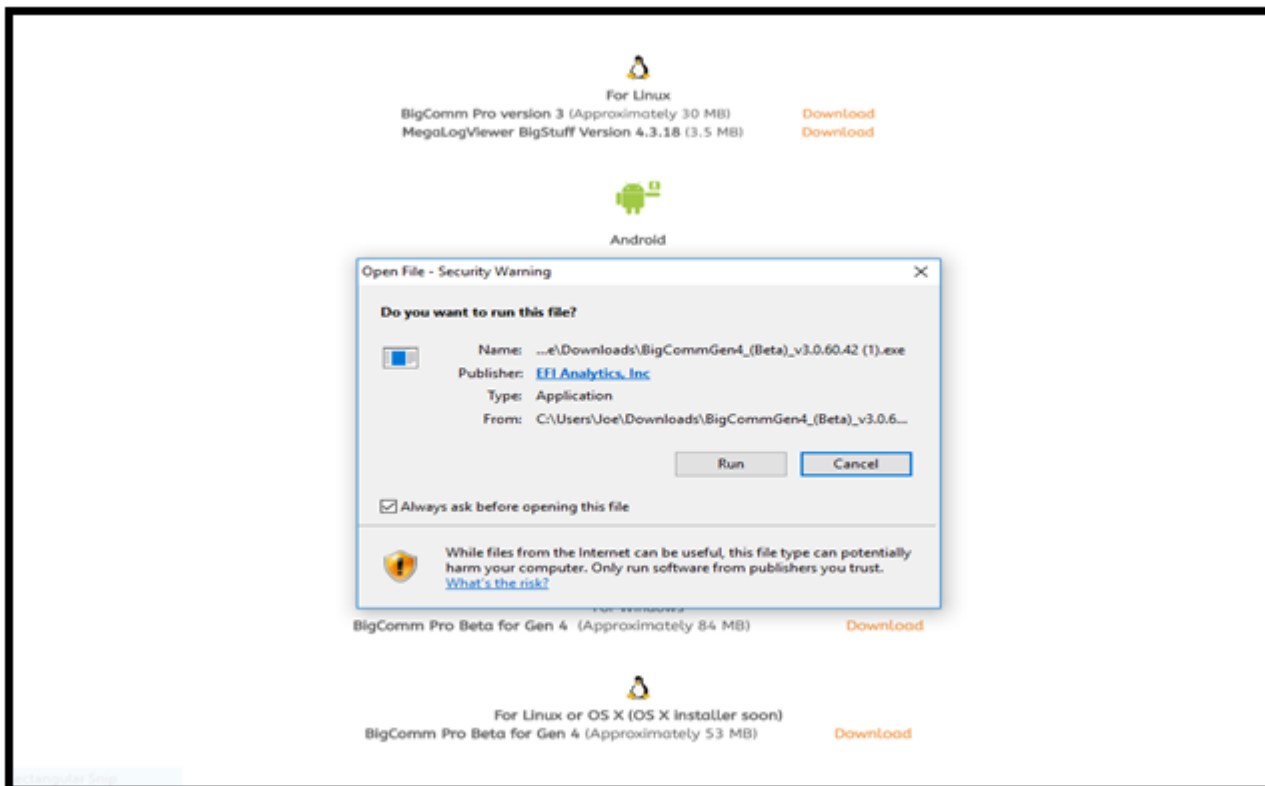
For Linux or OS X (OS X Installer soon)

BigComm Pro Beta for Gen 4 (Approximately 53 MB) [Download](#)

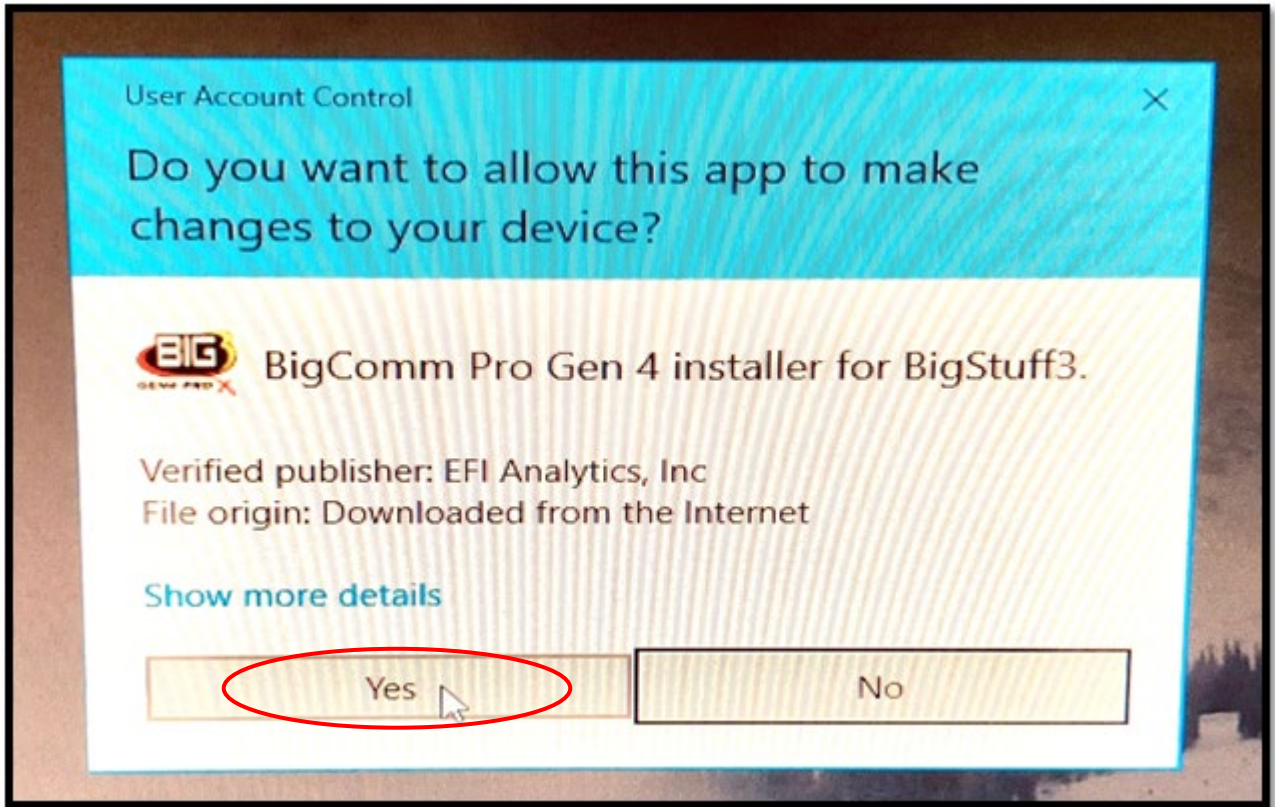
Step 2.5 - Once the **BigCommGen4** executable has completed downloading (84 MB), select it from the lower left-hand corner of the screen.



Step 2.6 - Select **Run**.



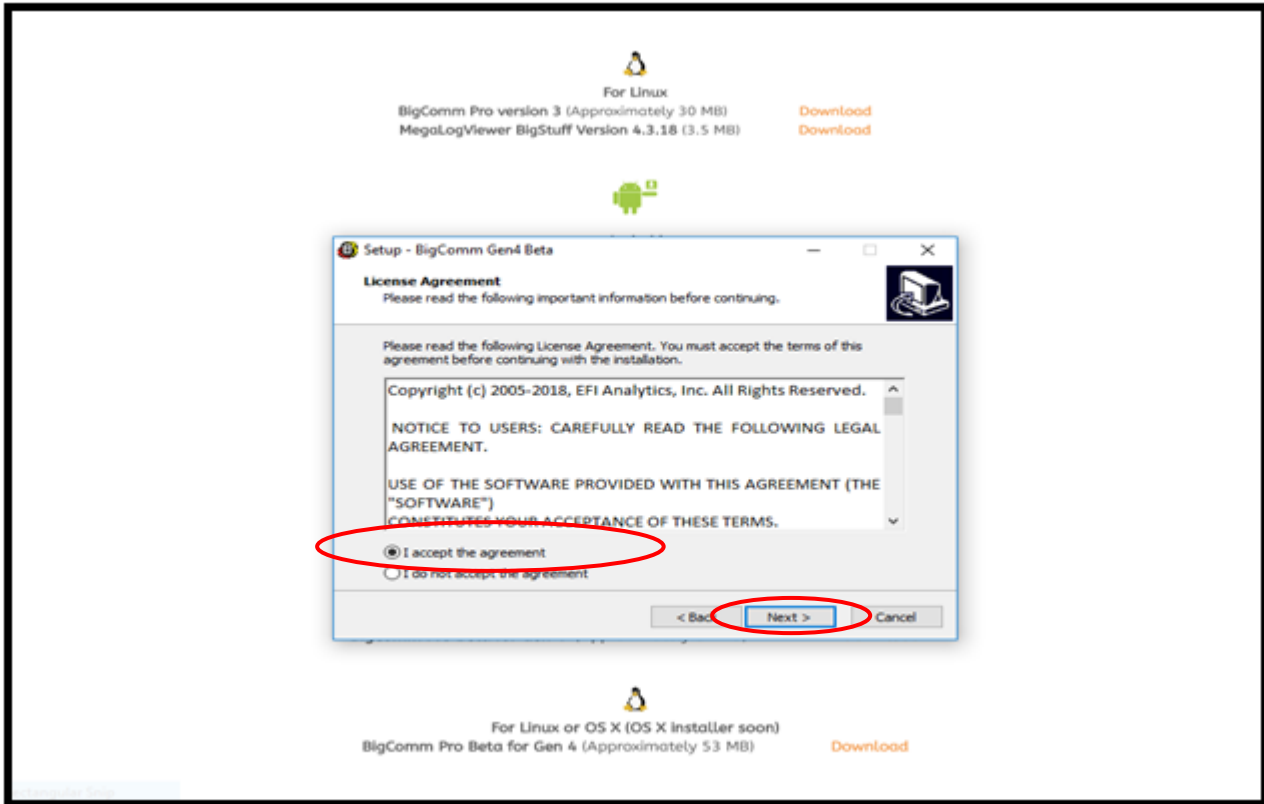
Step 2.7 - Select Yes.



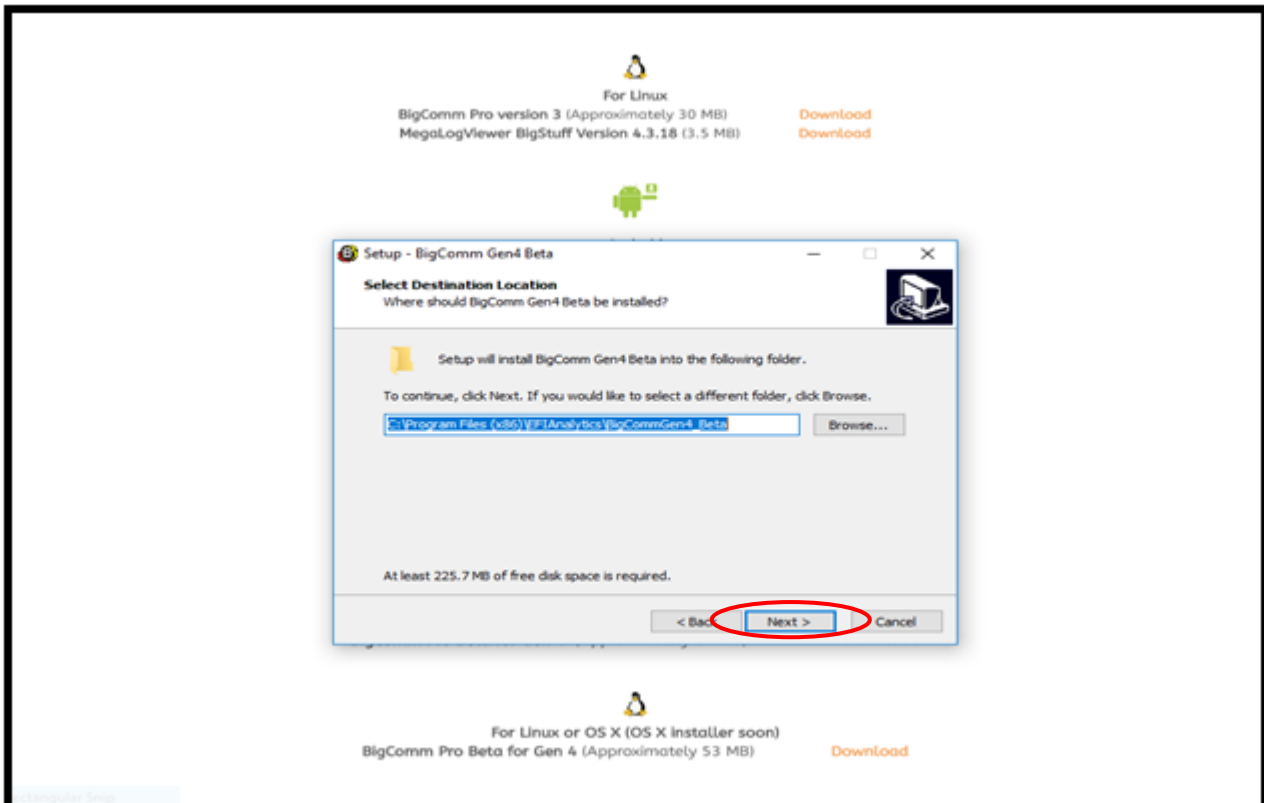
Step 2.8 - Select Next >



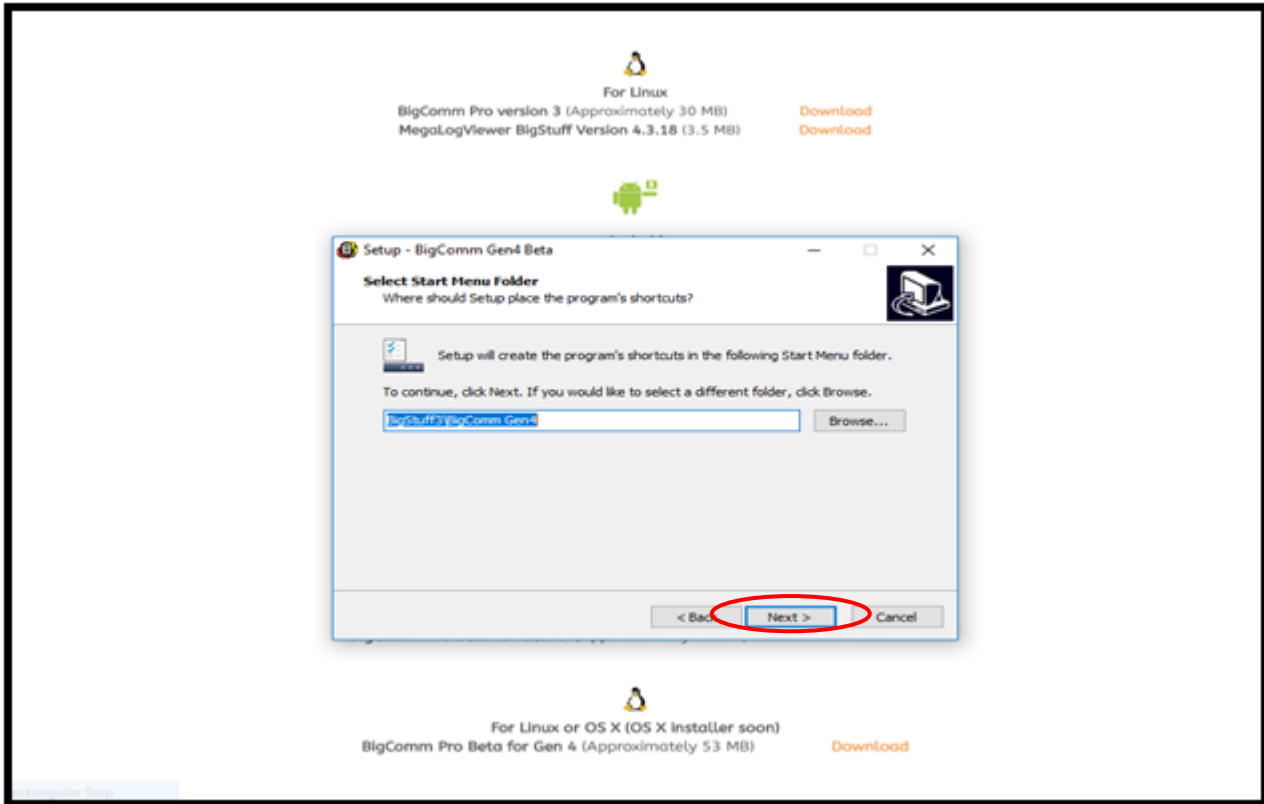
Step 2.9 - Select "I accept the agreement" and then select Next >



Step 2.10 - Select Next >



Step 2.11 - Select Next >

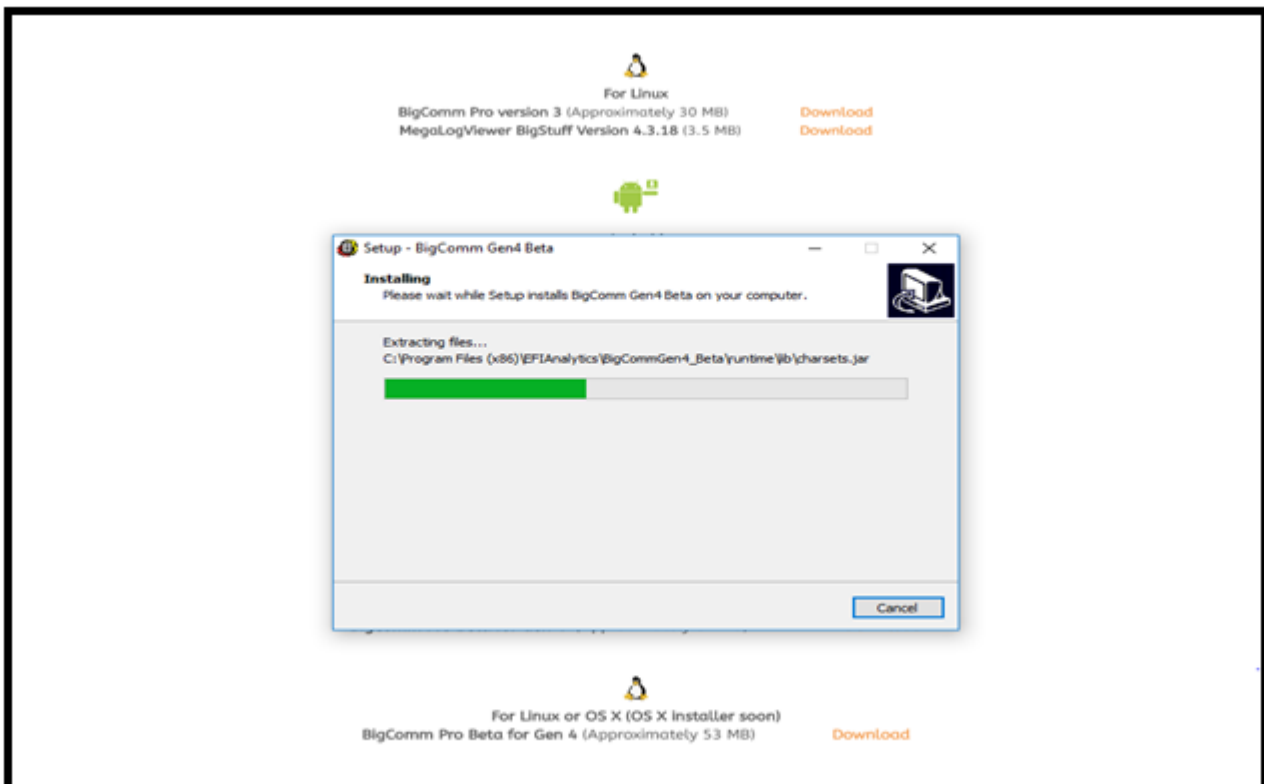


Step 2.12 - Check the "Create a desktop icon" box and then select Next >

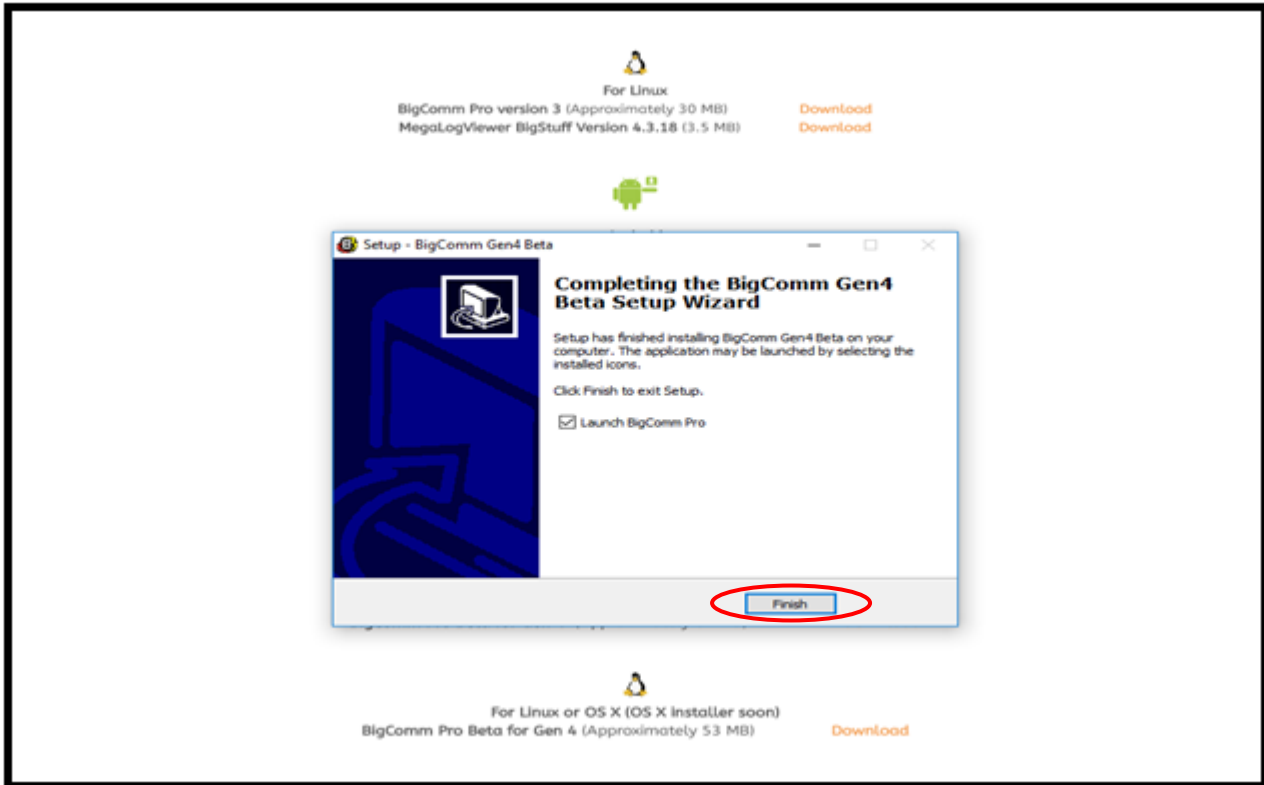


Step 2.13 - Select Install.

Step 2.14 - After selecting **Install** from Step 2.13, a status bar will appear showing the progress of the BigComm Pro (BCP) GEN4 software download to your PC.



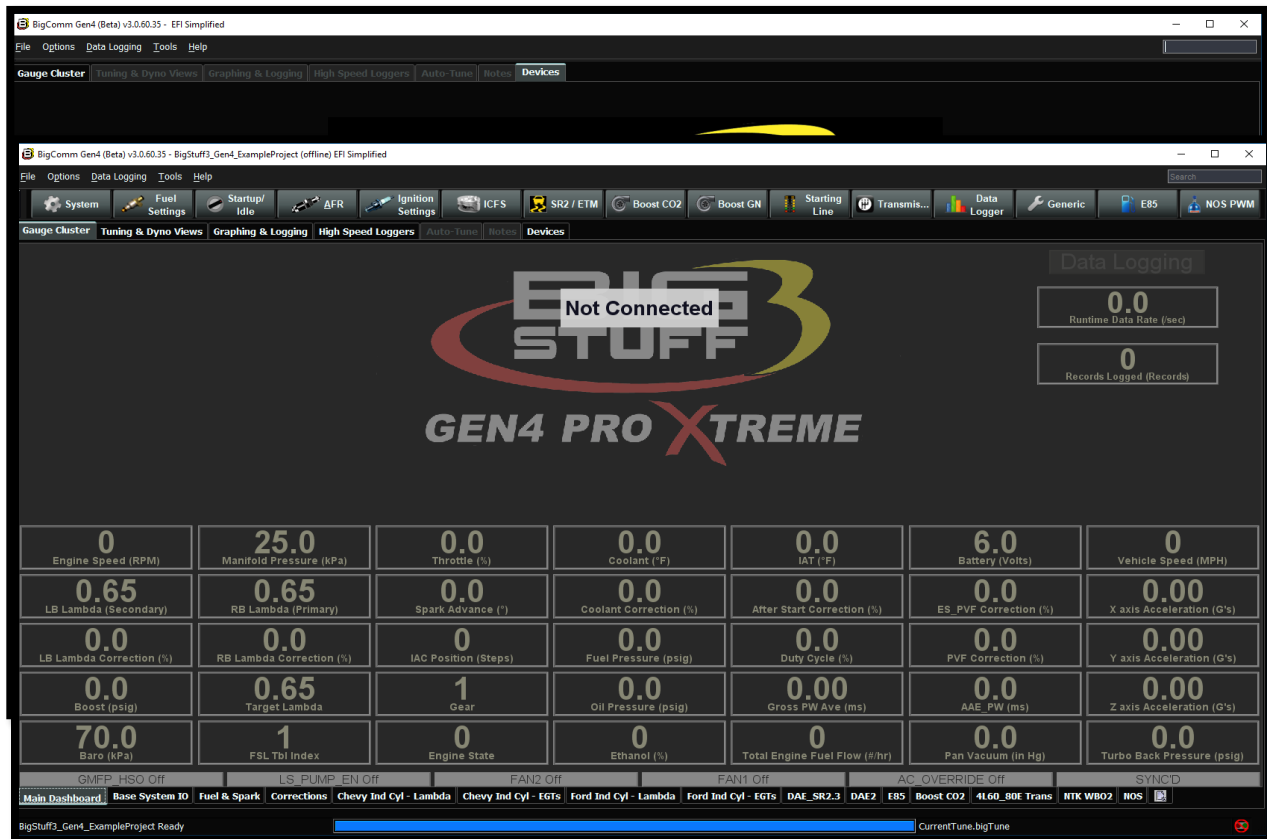
Step 2.15 - Select **Finish**.



Step 2.16 - After selecting **Finish** from Step 2.15, after a slight pause, the GEN4 PRO XTREME graphic screen will appear momentarily.



Step 2.17 - After another slight pause, the following GEN4 PRO XTREME software window will open. At this point, the software is running on your PC and you can work offline with an example Local Project: **BigStuff3_Gen4_ExampleProject** by selecting **Work offline**. The example Local Project contains a demo calibration, preconfigure dashboards and tuning tabs and **should only be used offline**.



Step 2.18 - After selecting **Work offline** from Step 2.17, the following **Main Dashboard** window will open. Now would be a great time to navigate the GEN4 PRO XTREME BigComm Pro software to get acquainted with it before establishing an “online” connection.

3. REQUIREMENTS TO ESTABLISH ONLINE COMMUNICATION BETWEEN PC RUNNING BIGCOMM PRO SOFTWARE AND GEN4 PRO XTREME ECU

[Back to Table of Contents](#)

“Online” communication refers to the actual live connection between the PC running the BigComm Pro software and GEN4 PRO XTREME ECU. The following things need to occur in order to establish online communication.

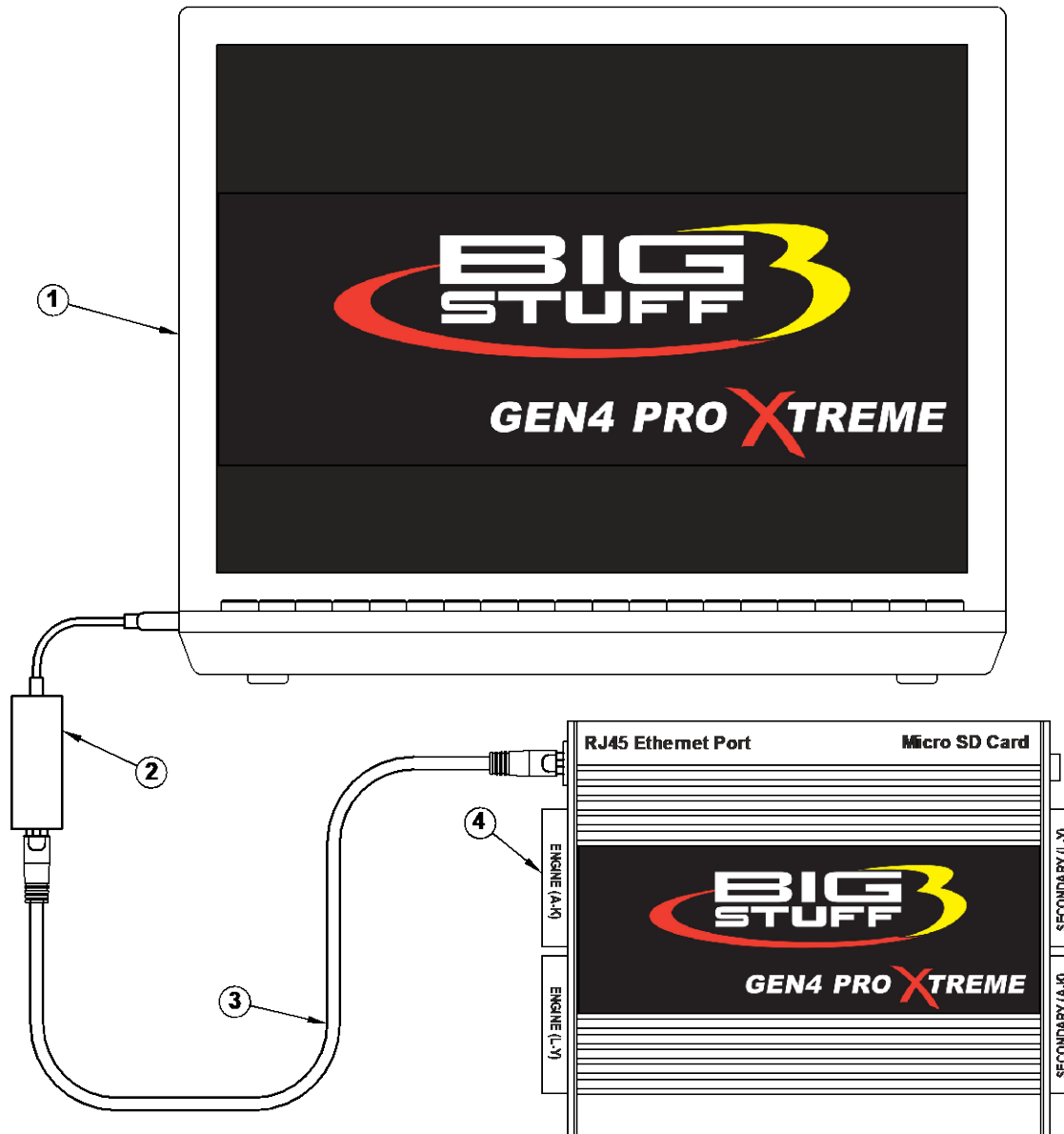
- The GEN4 PRO XTREME Main Wire Harness’ (MWH) (2) Cinch 30-way **ENGINE (A-K) & ENGINE (L-Y)** connectors must be connected to the GEN4 PRO XTREME’s (2) Cinch 30-way **ENGINE (A-K) & ENGINE (L-Y)** connectors. This connection must take place after the GEN4 PRO XTREME MWH’s **BATTERY (+) & Battery (-)** leads are connected directly to the vehicle’s battery.

- The GEN4 PRO XTREME Main Wire MWH's pink, **12V Switch** wire must be connected to the vehicle's switched ignition source and be powered on.
- A "Wired" or "Wireless" Ethernet connection needs to be established between the PC running the BigComm Pro software and GEN4 ECU an online communication. This is thoroughly detailed in the **GEN4 PRO XTREME System Hardware_BigCommPro Install Manual** located on the BS3 website under the GEN4 PRO XTREME tab. Pages 14 and 15 provide high-level configuration overviews for the Wired Ethernet network options. Pages 16 and 17 provide high-level configuration overviews for the Wireless Ethernet network options. The Wired Ethernet network connection options are straight forward and do not require a WiFi connection. However, the Wireless Ethernet network connection options require a WiFi interface to establish online communication between the PC running the BigComm Pro software and GEN4 PRO XTREME ECU. Details on how to establish an online WiFi connection start on page 18.
- The GEN4 PRO XTREME ECU's integrated RJ45 connector's Orange LED begins to flash.

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Wired Ethernet Network 1 configuration for "In-Vehicle" applications

GEN4 PRO XTREME ECU / PC / Wired Ethernet Connection Configuration



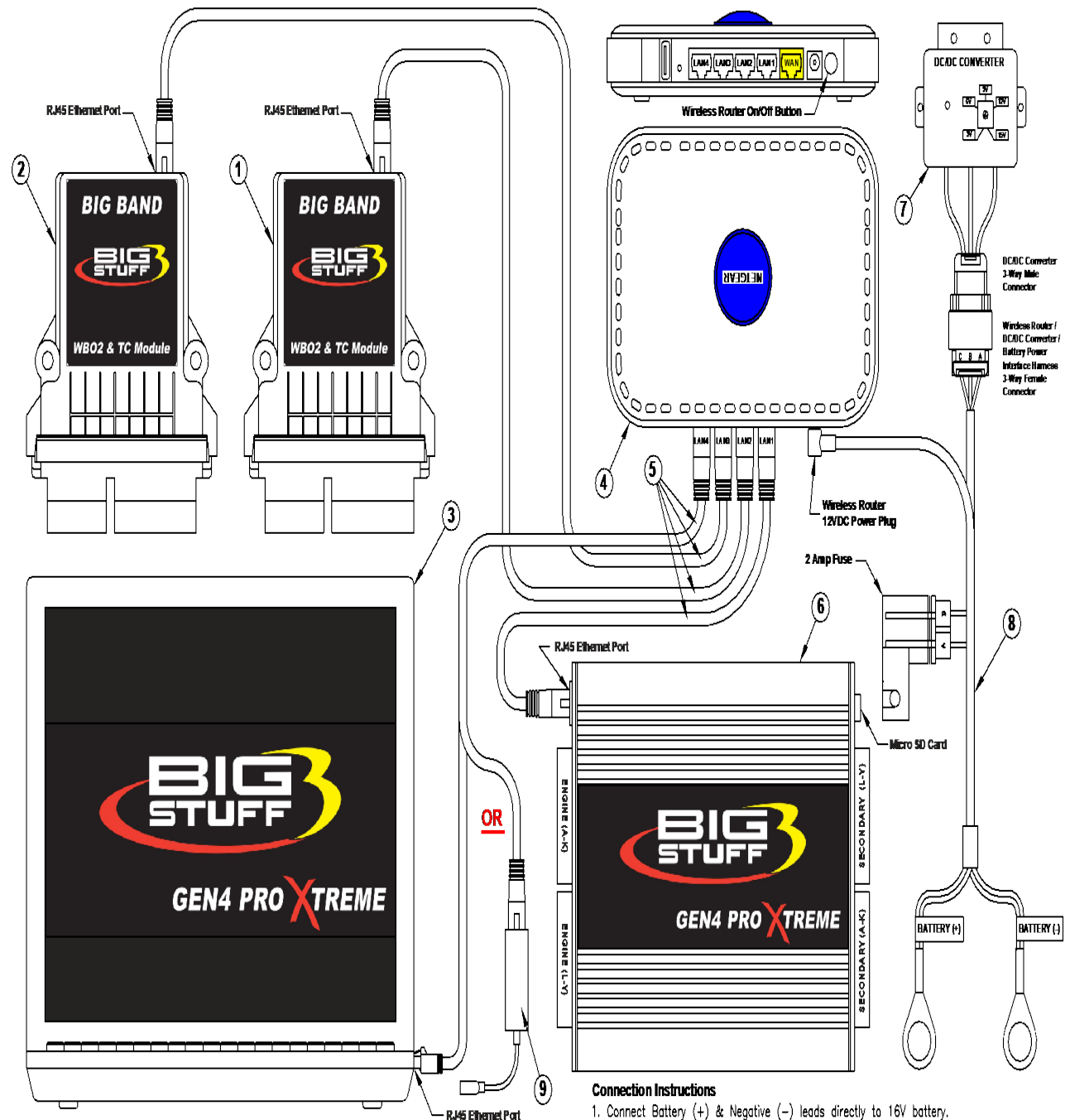
- ① PC running BIGCOMM PRO Software
- ② USB-to-RJ45 Ethernet Dongle
- ③ 5' CAT6a Shielded Ethernet Cable
- ④ GEN4 PRO XTREME ECU

Connection Instructions

1. Connect one end of the 5' CAT6a Shielded Ethernet Cable directly to the PC's RJ45 Ethernet port and the other end to the GEN4 PRO XTREME ECU's RJ45 Ethernet port. **OR**
2. If the PC is not equipped with a RJ45 Ethernet port, use the BS3 USB-to-RJ45 Ethernet Dongle (P/N: BS4-003-007) to establish a RJ45 Ethernet port using one of the PC's USB ports. Once installed, connect one end of the 5' CAT6a Shielded Ethernet Cable into the RJ45 Ethernet port of the USB-to-RJ45 Ethernet Dongle and the other end to the GEN4 PRO XTREME ECU'S RJ45 Ethernet port.

Wired Ethernet Network 2 configuration for "Race-Car" & Dyno applications

GEN4 PRO XTREME ECU / BIG BAND / PC / Race Car Wired Router & DC/DC Converter Network Configuration

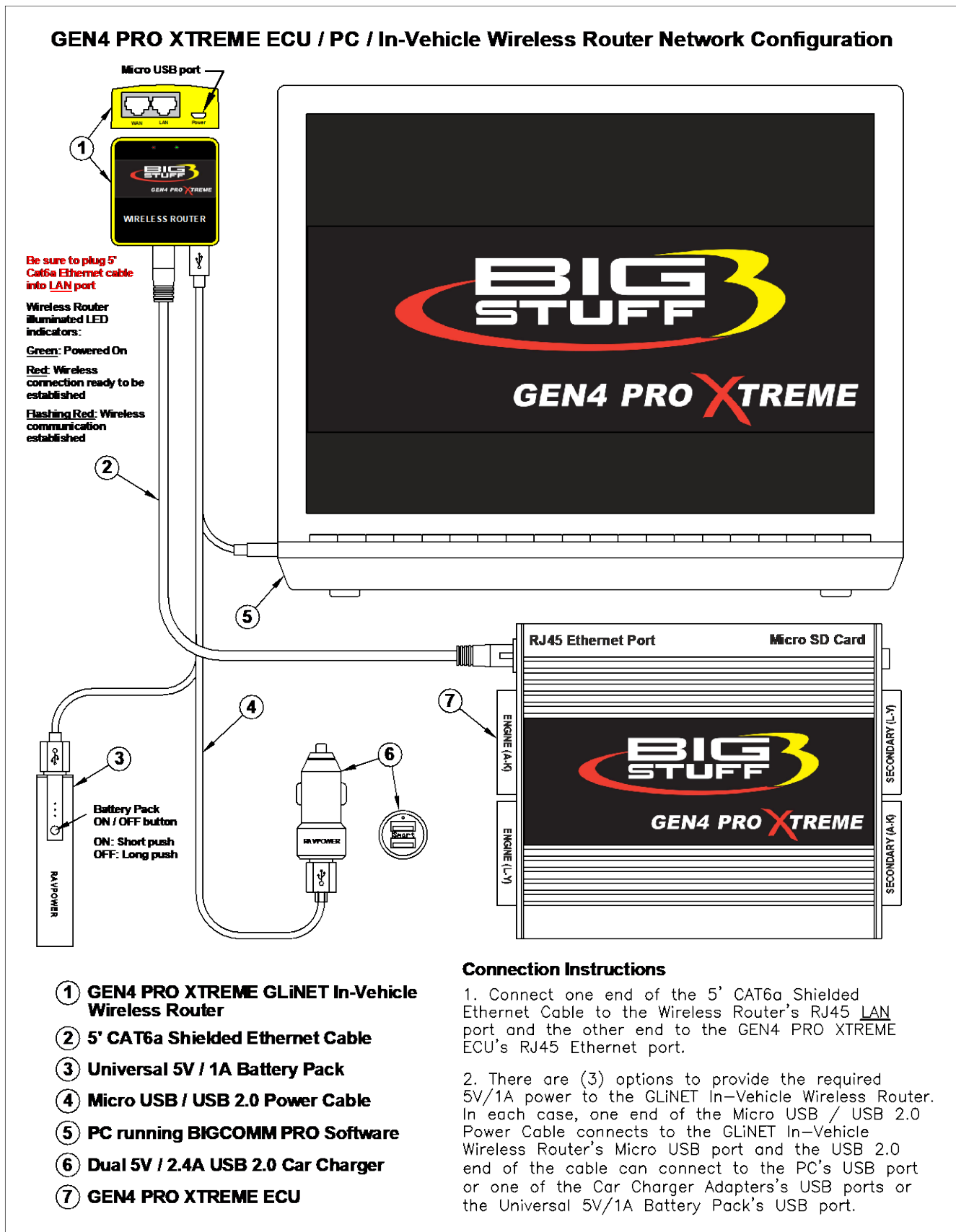


- ① BIG BAND Module 1
- ② BIG BAND Module 2
- ③ PC running BIGCOMM Pro Software
- ④ NETGEAR N600 Race Car Wireless Router
- ⑤ 5' CAT6a Shielded Ethernet Cable
- ⑥ GEN4 PRO XTREME ECU
- ⑦ DC/DC Converter (+15VDC to 12VDC)
- ⑧ Wireless Router / DC/DC Converter / Battery Power Interface Harness
- ⑨ USB-to-RJ45 Ethernet Dongle (required if PC does not have a RJ45 Ethernet port)

- Connection Instructions**
1. Connect Battery (+) & Negative (-) leads directly to 16V battery.
 2. Connect DC/DC Converter 3-Way Male connector to Wireless Router / DC/DC Converter / Battery Power Interface Harness 3-Way Female connector.
 3. Connect 12VDC Power Plug into Wireless Router DC Power Plug Receptacle.
 4. Connect (1 of 4) 5' CAT6a Shielded Ethernet Cable between GEN4 PRO XTREME ECU RJ45 Ethernet port and NETGEAR N600 Wireless Router RJ45 LAN1 port.
 5. Connect (2 of 4) 5' CAT6a Shielded Ethernet Cable between BIG BAND Module 1 RJ45 port and NETGEAR N600 Wireless Router RJ45 LAN2 port.
 6. Connect (3 of 4) 5' CAT6a Shielded Ethernet Cable between BIG BAND Module 2 RJ45 port and NETGEAR N600 Wireless Router RJ45 LAN3 port.
 7. Connect (4 of 4) 5' CAT6a Shielded Ethernet Cable between NETGEAR N600 Wireless Router RJ45 LAN4 port and PC's RJ45 Ethernet Port. If PC is not equipped with a RJ45 Ethernet port a USB-to-RJ45 Ethernet Dongle is required.

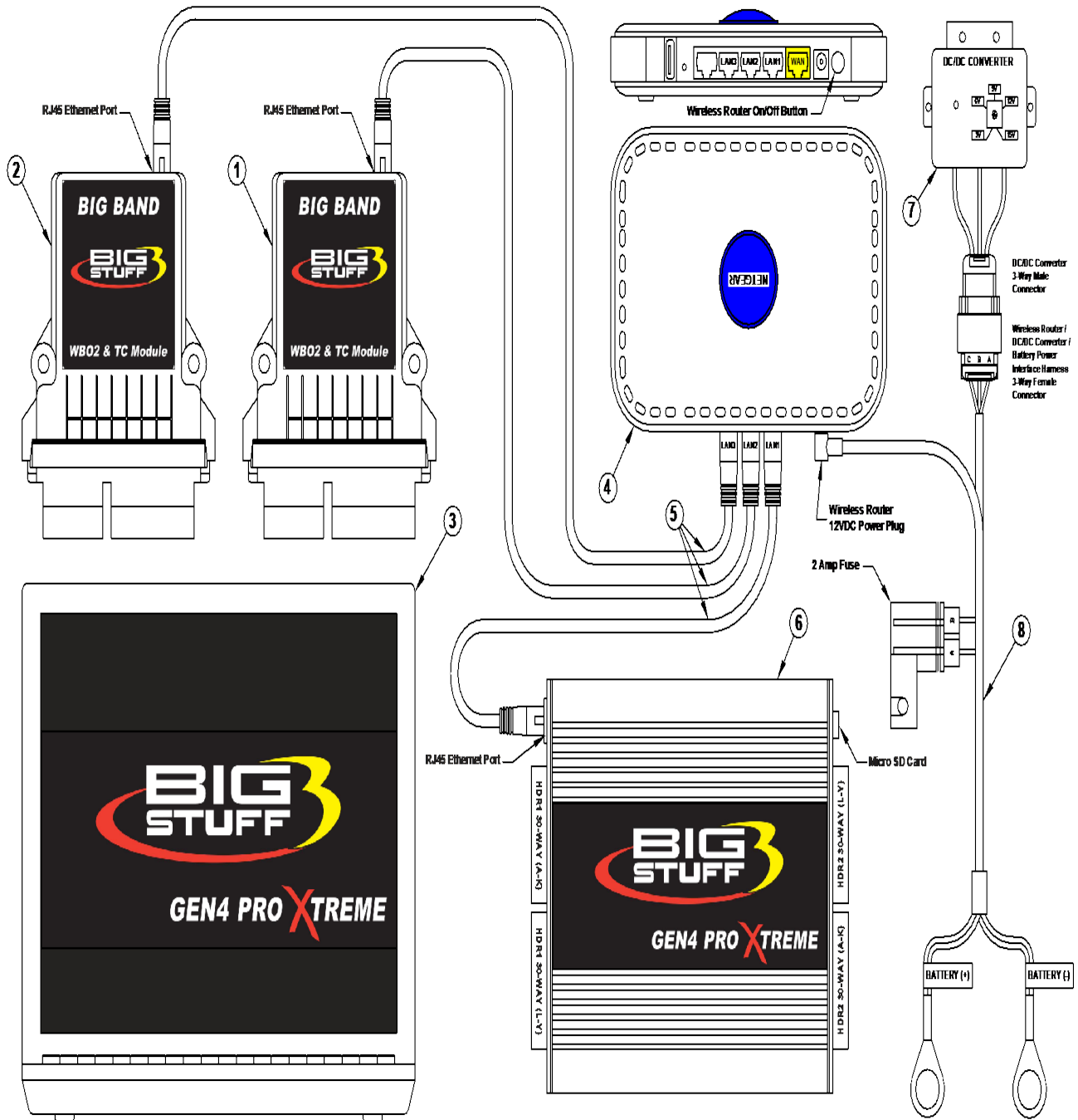


Wireless Ethernet Network 1 configuration for "In-Vehicle" applications



Wireless Ethernet Network 2 configuration for "Race Car" & Dyno applications

GEN4 PRO XTREME ECU / BIG BAND / PC / Race Car Wireless Router & DC/DC Converter Network Configuration



- ① BIG BAND Module 1
- ② BIG BAND Module 2
- ③ PC running BIGCOMM Pro Software
- ④ NETGEAR N600 Race Car Wireless Router
- ⑤ 5' CAT6a Shielded Ethernet Cable
- ⑥ GEN4 PRO XTREME ECU
- ⑦ DC/DC Converter (+15VDC to 12VDC)
- ⑧ Wireless Router / DC/DC Converter / Battery Power Interface Harness

Connection Instructions

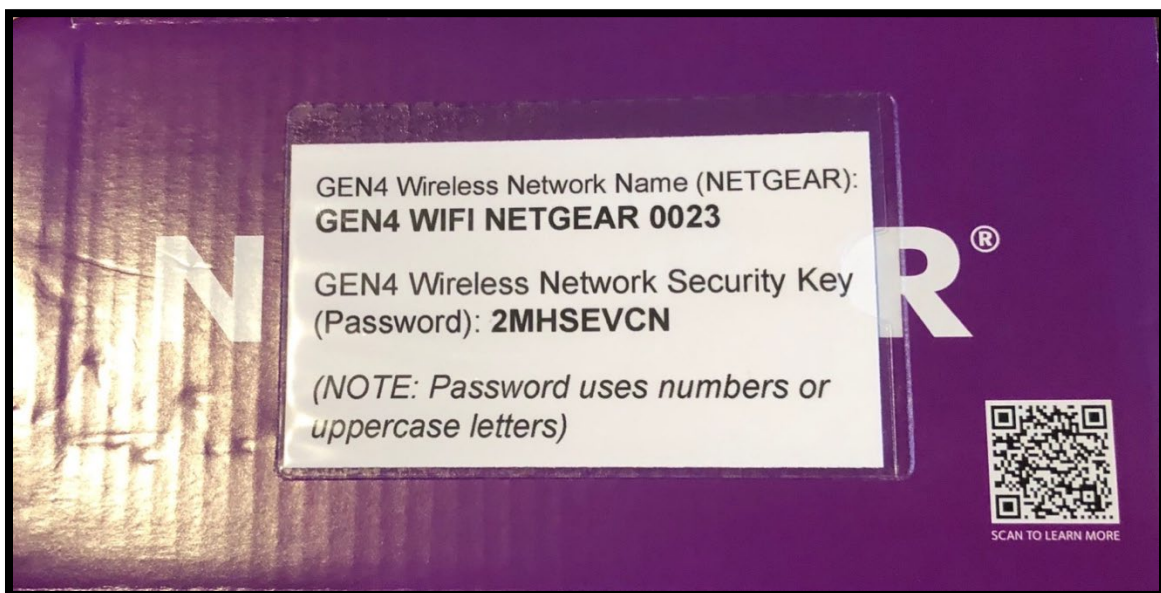
1. Connect Battery (+) & Negative (-) leads directly to 16V battery.
2. Connect DC/DC Converter 3-Way Male connector to Wireless Router / DC/DC Converter / Battery Power Interface Harness 3-Way Female connector.
3. Connect 12VDC Power Plug into Wireless Router DC Power Plug Receptacle.
4. Connect (1 of 3) 5' CAT6a Shielded Ethernet Cable between GEN4 PRO XTREME ECU RJ45 Ethernet port and NETGEAR N600 Wireless Router RJ45 LAN1 port.
5. Connect (2 of 3) 5' CAT6a Shielded Ethernet Cable between BIG BAND Module 1 RJ45 port and NETGEAR N600 Wireless Router RJ45 LAN2 port.
6. Connect (3 of 3) 5' CAT6a Shielded Ethernet Cable between BIG BAND Module 2 RJ45 port and NETGEAR N600 Wireless Router RJ45 LAN3 port.

4. ESTABLISH WIFI WIRELESS ETHERNET NETWORK CONNECTION BETWEEN PC RUNNING THE BIGCOMM PRO SOFTWARE AND GEN4 PRO XTREME ECU

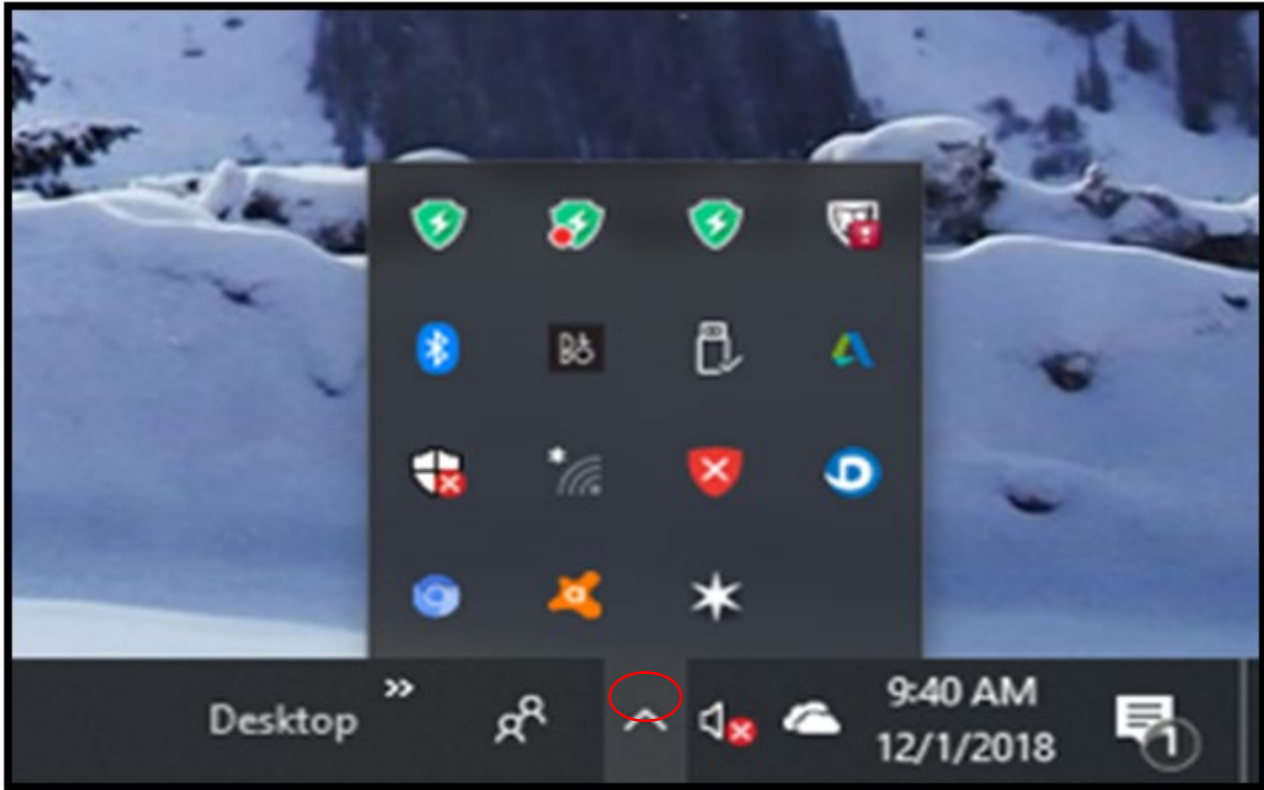
[Back to Table of Contents](#)

The following steps detail how to establish a WiFi Wireless Ethernet Network Connection between a PC running the BigComm Pro GEN4 software installed and a GEN4 PRO XTREME Wireless Ethernet Network using the yellow GLiNet Wireless Router for In-Vehicle applications or the NETGEAR N600 Wireless Router for Race Car applications. It assumes the In-Vehicle or Race Car Wireless Router Network connections detailed on page 16 or 90 have been established.

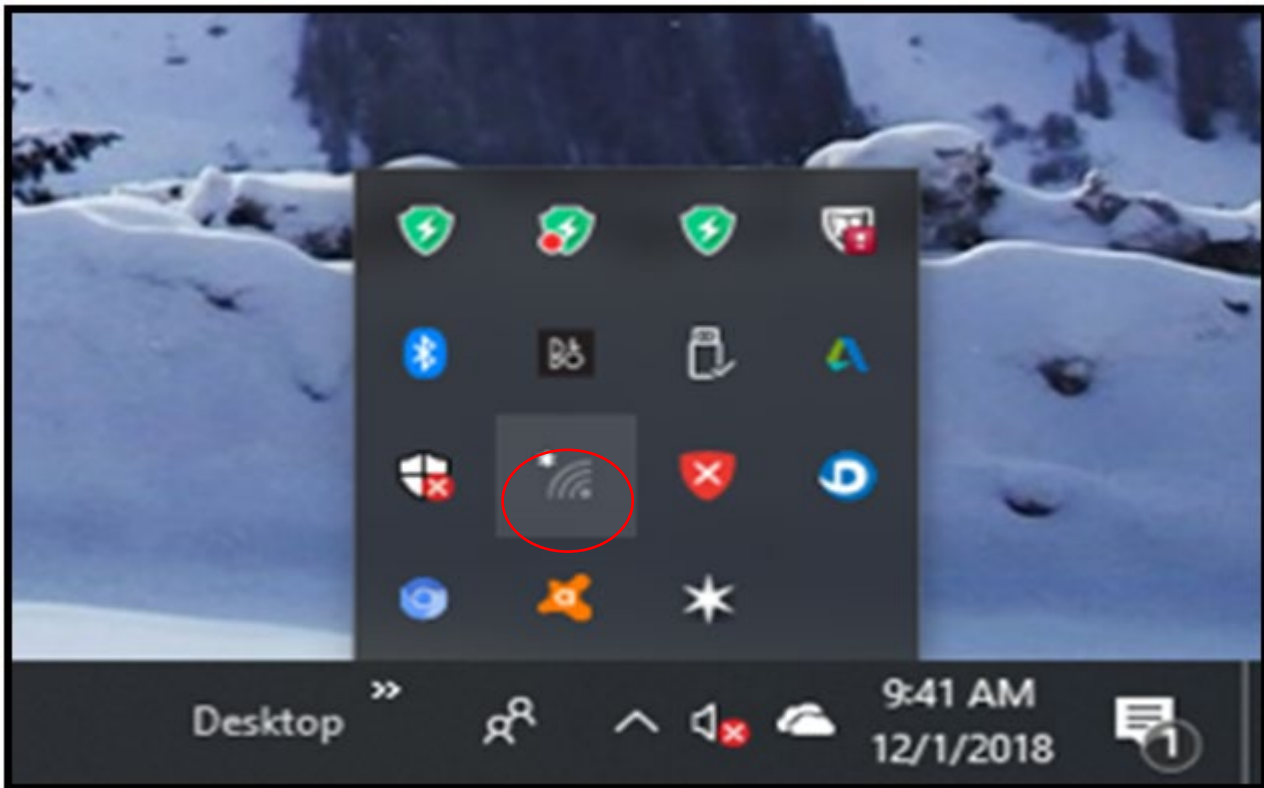
Note: The GEN4 PRO XTREME system includes an ID card that identifies the GEN4 Wireless Network Name (GLiNet or NETGEAR) and Security Key (Password) as shown below. The ID card is located in the sleeve attached to the GLiNET Mini Smart Router box or NETGEAR N600 Router box. The GEN4 Wireless Network Name (GLiNet or NETGEAR) and Security Key (Password) are required to establish the initial wireless connection between the BigComm Pro software running on a PC and GEN4 PRO XTREME ECU. Be sure not to misplace the GEN4 wireless Network Name and Security Key (Password) ID card and do not share it with others.



Step 4.1 – Once the PC is powered on, left-mouse click on the **up arrow** in the lower right-hand corner of the tool bar as shown below.



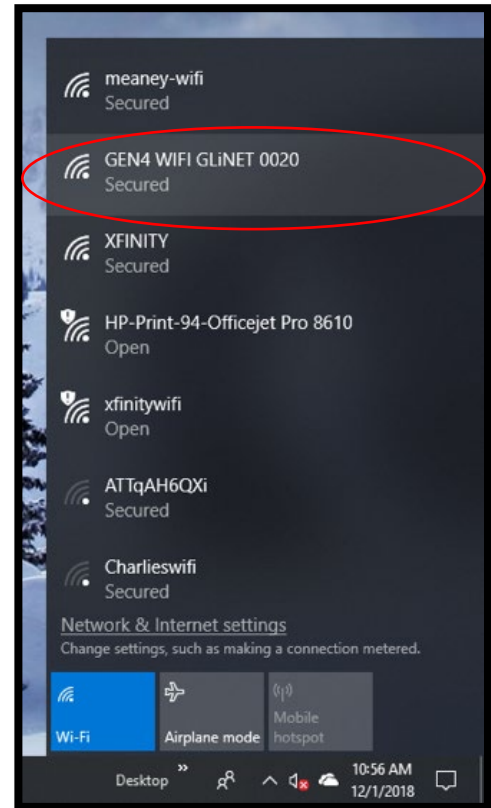
Step 4.2 – Left mouse click on the **Wireless Network** icon as shown below.



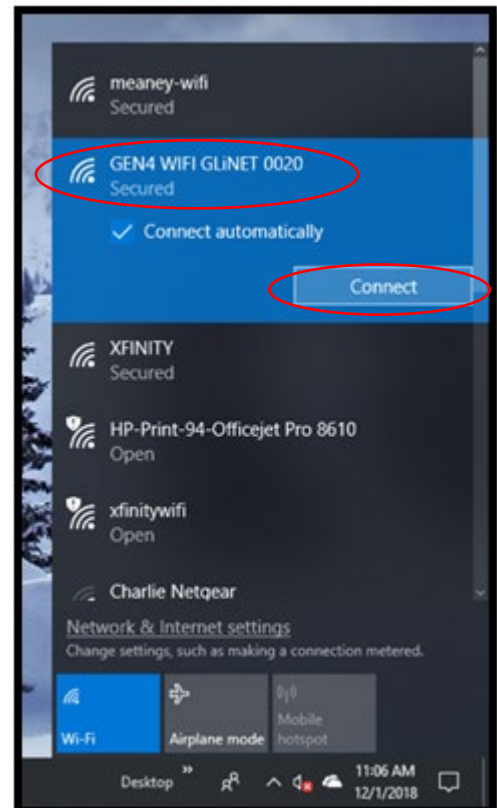
Step 4.3 - Once the **Wireless Network** window opens, highlight and left mouse click on the GEN4 Wireless Network name as shown below. For this example, the GEN4 Wireless Network Name is; **GEN4 WIFI GLiNET 0020**, per the above GEN4 Wireless Network Name (GLiNet or NETGEAR) and Security Key (Password) ID card.

Always be sure to highlight and left mouse click on the GEN4 Wireless Network Name (GLiNet or NETGEAR) that appears on the ID card included with your GEN4 PRO XTREME system.

Note: The GEN4 Wireless Network uses two naming conventions dependent on which wireless router is being used. If the yellow GLiNet "In-Vehicle" wireless router is being used, the GEN4 Wireless Network naming convention is "**GEN4 WIFI GLiNET 0001 thru 9999**". If the NETGEAR N600 "Race Car" wireless router is being used, the GEN4 Wireless Network naming convention is "**GEN4 WIFI NETGEAR 0001 thru 9999**".



Step 4.4 - Once the GEN4 WIFI GLiNET Wireless Network dialogue window opens as shown below, check the **Connect automatically** box and then left mouse click on **Connect**.

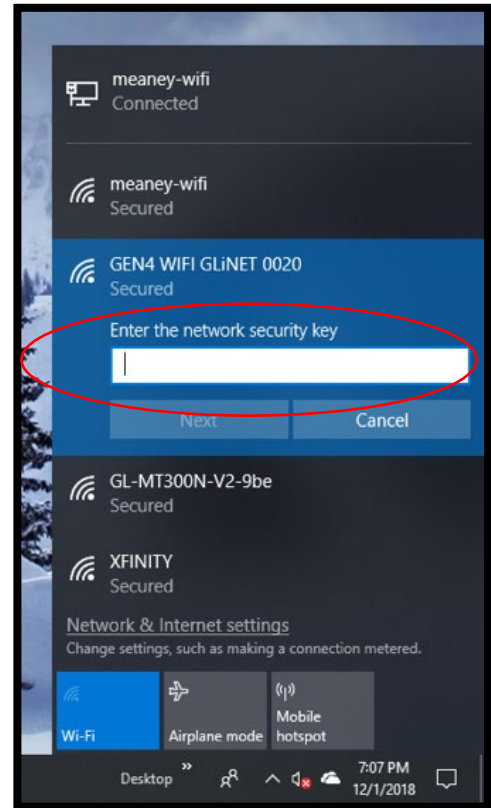


Step 4.5 - Once **Connect** is selected from Step 4.4, the following dialogue window will open. It has a blank dialogue box under the **Enter the network security key** text. This is where the network security key needs to be entered.

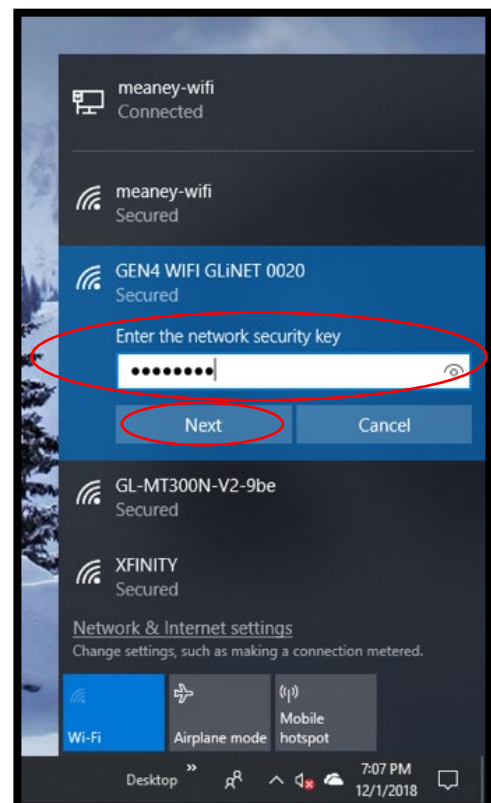
Key Point!!! The **Network Security Key** is also referred to as the **GEN4 Wireless Network Security Key (Password)**.

For this example, the GEN4 Wireless Network Security Key (Password) is; **RZ94JA5R**, per the above GEN4 Wireless Network Name (GLiNet) and Security Key (Password) ID card.

Note: Be sure to use the **GEN4 Wireless Network Security Key (Password)** as it appears on the GEN4 Wireless Network Name (GLiNet or Netgear) and Security Key (Password) ID card included with your GEN4 PRO XTREME system. All GEN4 Wireless Network Security Keys (Passwords) use numbers and/or uppercase letters.



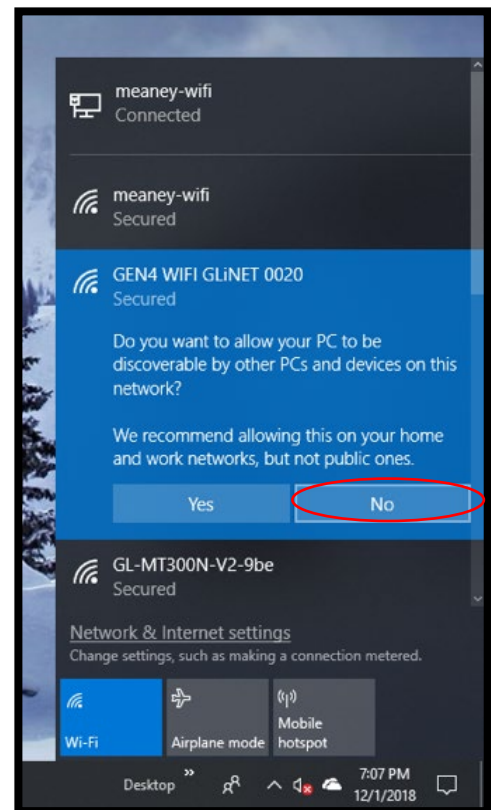
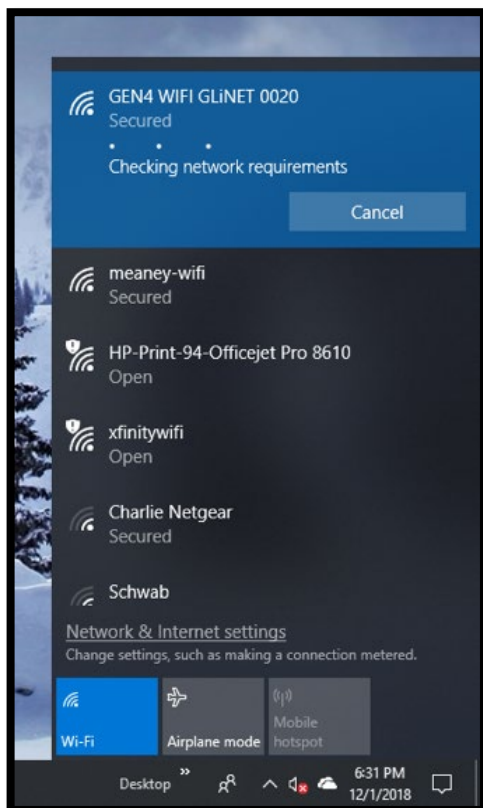
Step 4.6 - Type the **GEN4 Wireless Network Security Key (Password)** under the **Enter the network security key** dialogue box as shown below and highlight and left mouse click on **Next**.



Note: The provided GEN4 Wireless Network Security Key (Password) is not required to be entered again after the initial wireless connection between a specific PC & GEN4 Wireless Network has been established. The only time the provided Wireless Network Password is required to be entered again is to establish a new wireless connection between a different PC running the BigComm Pro software and GEN4 PRO XTREME ECU.

Note: You can change the GEN4 Wireless Network Name and/or Password. You may want to change the GEN4 Wireless Network Name to easily associate it to a specific vehicle if running multiple vehicles with multiple GEN4 PRO XTREME Wireless Networks. Instructions on how to change the GEN4 Wireless Network Name and/or Password are located on the BS3 website under the GEN4 PRO XTREME section.

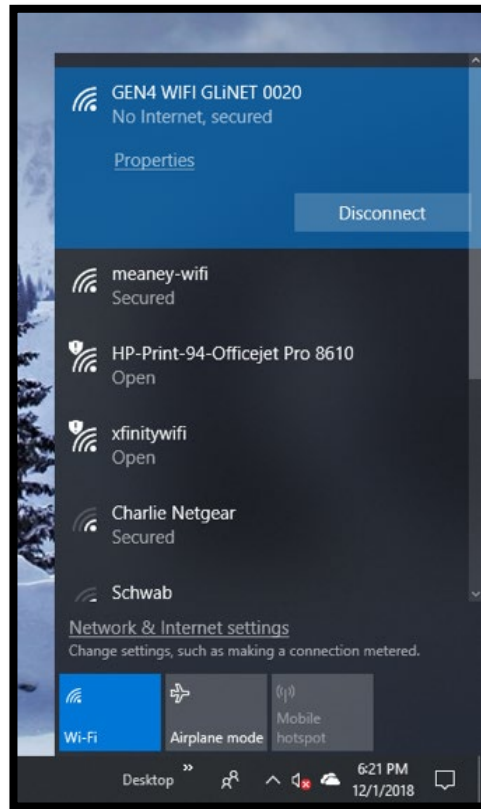
Step 4.7 - After left mouse clicking on **Next** from Step 4.6, the following dialogue window will open asking; “**Do you want to allow your PC to be discoverable by other PCs and devices on this network?**”, Highlight and left mouse click on **No**.



Step 4.8 - Once **No** is selected from Step 4.7, the following window will open showing your specific GEN4 WIFI GLiNET (0001 thru 9999) network is **Checking network requirements** and is attempting to establish a wireless connection with the PC.

Step 4.9 - After a brief period of time, the following window will open to indicate the wireless network connection has been established between the PC and your specific GEN4 WIFI GLiNET (0001 thru 9999) or GEN4 WIFI NETGEAR (0001 thru 9999) wireless router.

Reminder: The GEN4 Wireless Network name will be GEN4 WIFI GLiNET (0001 thru 9999) if using the yellow GLiNET “In-Vehicle” wireless router. The GEN4 Wireless Network name will be GEN4 WIFI NETGEAR (0001 thru 9999) if using the NETGEAR N600 “Race Car” wireless router.



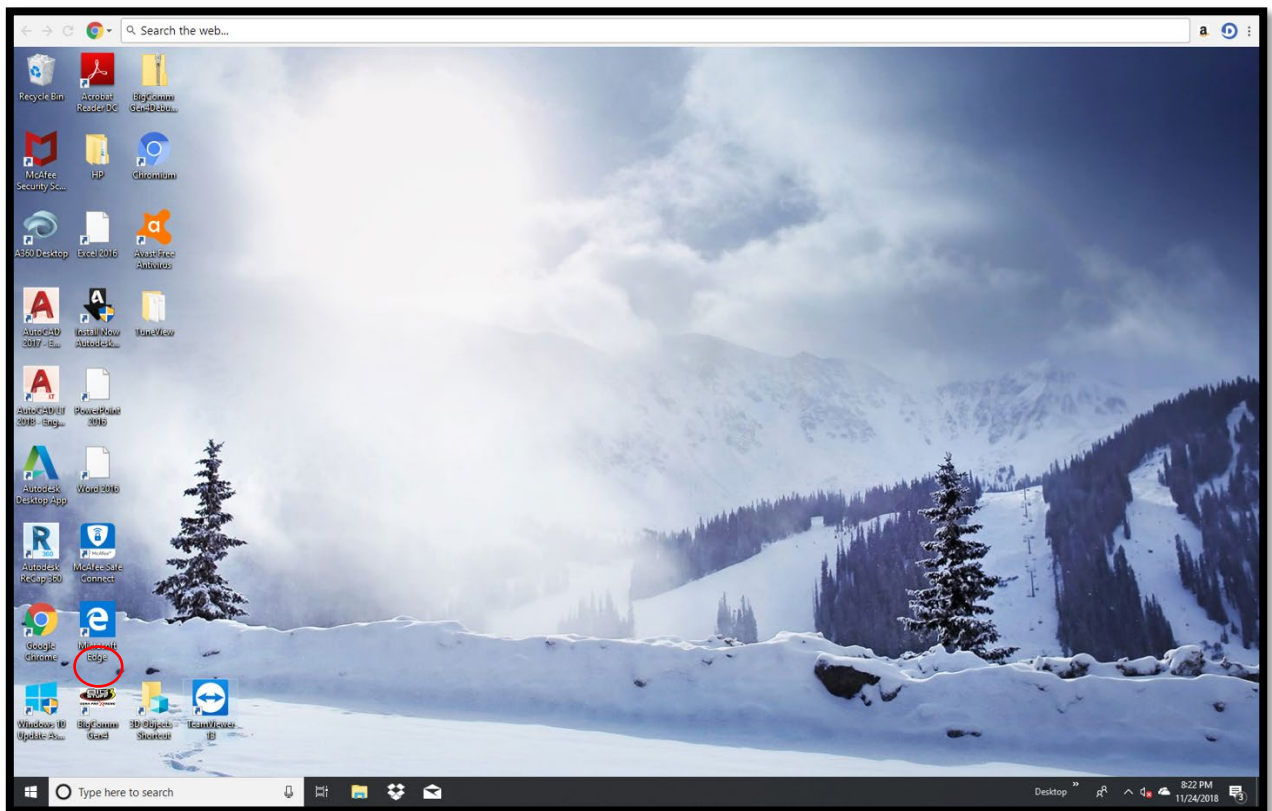
Once the Wireless Network Connection has been established as detailed in Steps 4.1 thru 4.9, an initial online communication can be established between the PC running the BCP software and GEN4 PRO XTREME ECU connected to the GEN4 WIFI GLiNET (0001 thru 9999) or GEN4 WIFI NETGEAR (0001 thru 9999) wireless router.

5. ESTABLISH ONLINE COMMUNICATION BETWEEN PC RUNNING BIGCOMM PRO SOFTWARE AND GEN4 PRO XTREME ECU

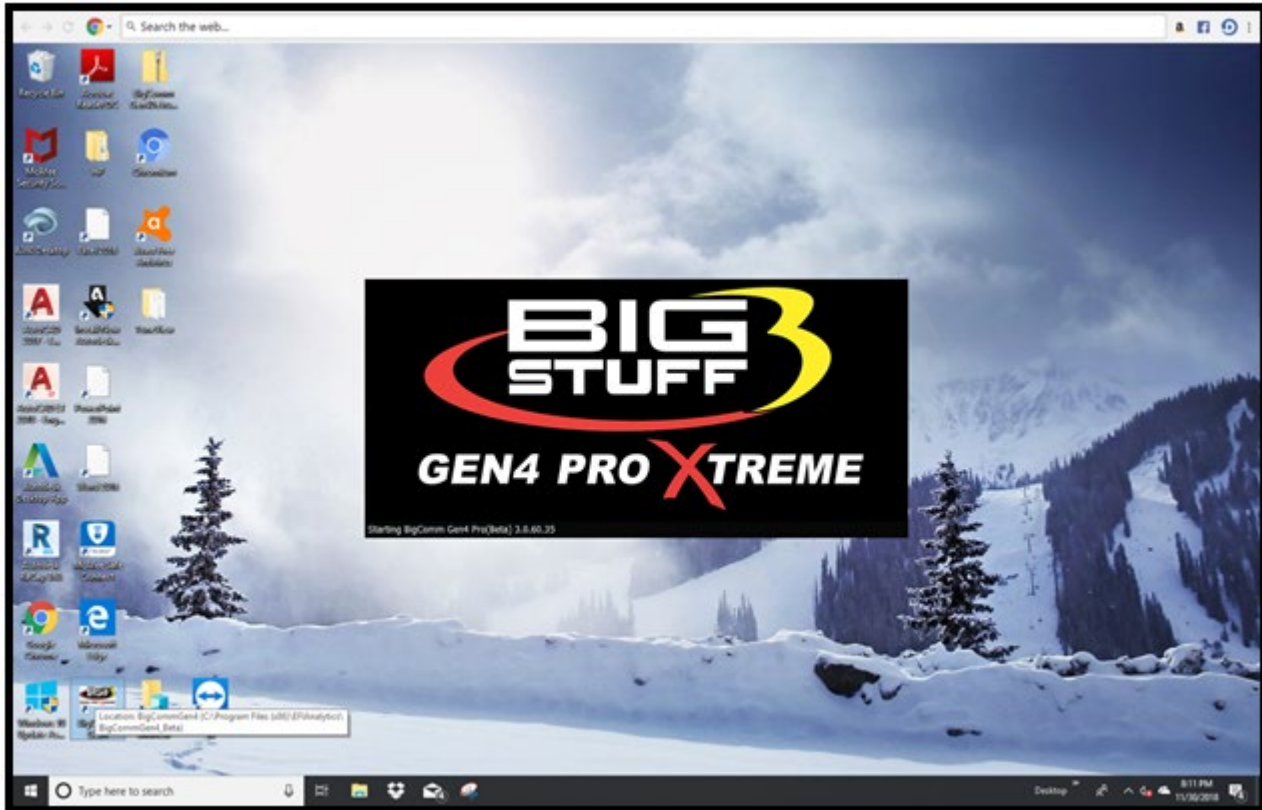
[Back to Table of Contents](#)

The following steps describe how to establish online wired or wireless communication between the PC running BigComm Pro Software and GEN4 PRO XTREME ECU. The initial online connection also “Activates” the BigComm Pro software and GEN4 PRO XTREME ECU interface to enable the BCP software to create an initial Project. (This only occurs when connecting between a PC running the BCP software and GEN4 PRO XTREME ECU for the first time)

Step 5.1 - Once the GEN4 PRO XTREME ECU is powered on (VBATT (+), VBATT (-) & +12V switched Ignition), and a Wired or Wireless Ethernet Network connection is established between the PC running the BigComm Pro software and GEN4 PRO XTREME ECU, open the GEN4 PRO XTREME BCP software from the PC's desktop by double clicking on the **GEN4 PRO XTREME BCP icon** located in the lower left-hand corner of screen.



Step 5.2 - Once the **BCP icon** is selected, the following GEN4 PRO XTREME graphic will momentarily appear on the screen.

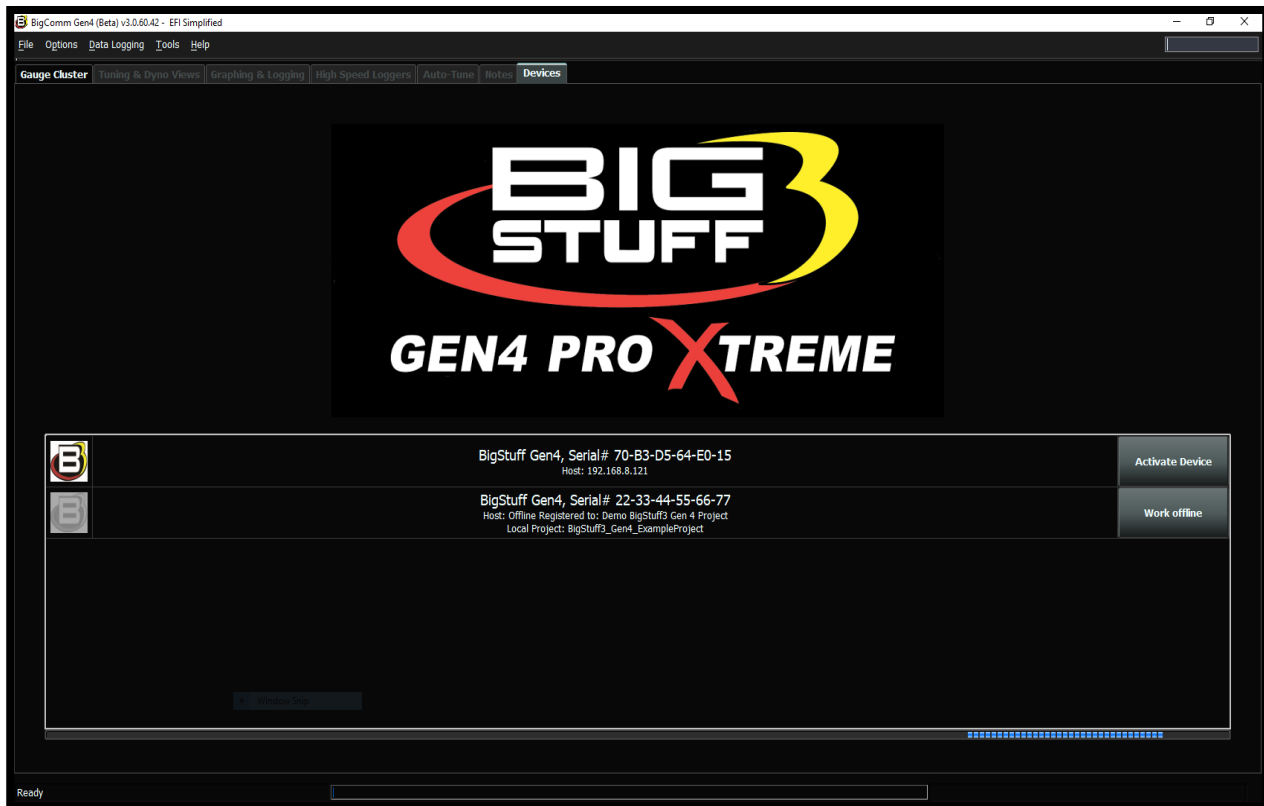


Step 5.3 - After a momentary pause, the following BCP software window will open. As you can see, there are two possible selections to choose from;

The first is: **Bigstuff Gen4, Serial# 70-B3-D5-64-E0-15**. This is the Serial Number (MAC ID) of the GEN4 PRO XTREME ECU that will be communicating with the PC running the BCP software once it's activated.

The second is: **Bigstuff Gen4, Serial# 22-33-44-55-66-77**. This is the default serial number associated with the example Local Project: **BigStuff3_GEN4_ExampleProject** running offline on the PC. The example Local Project: **BigStuff3_GEN4_ExampleProject** was included as part of the BCP software download package and contains a demo calibration, preconfigure dashboards and tuning tabs and is only meant to be **used offline** to navigate and get acquainted with the BCP software.

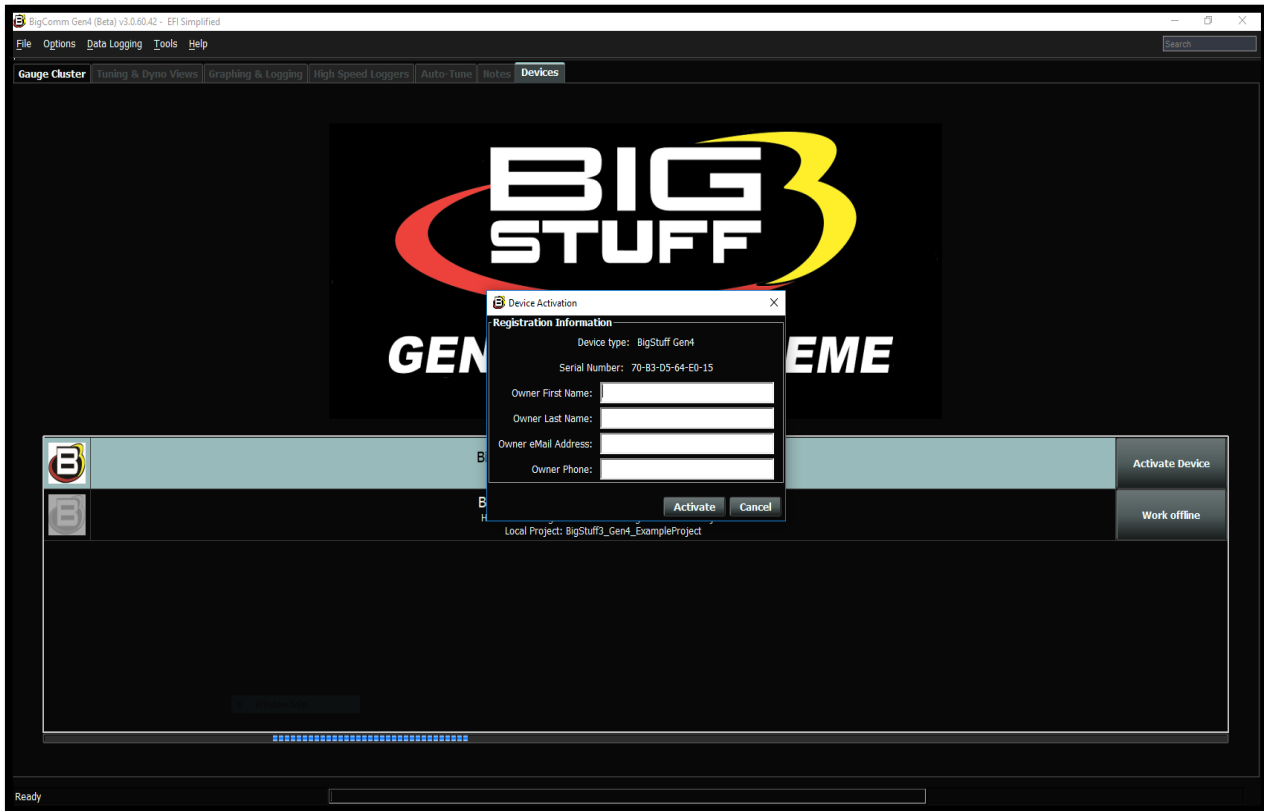
Before an initial Project can be created, the BigComm Pro software & GEN4 PRO XTREME ECU interface needs to be activated. This is initiated by single clicking on **Activate Device**.



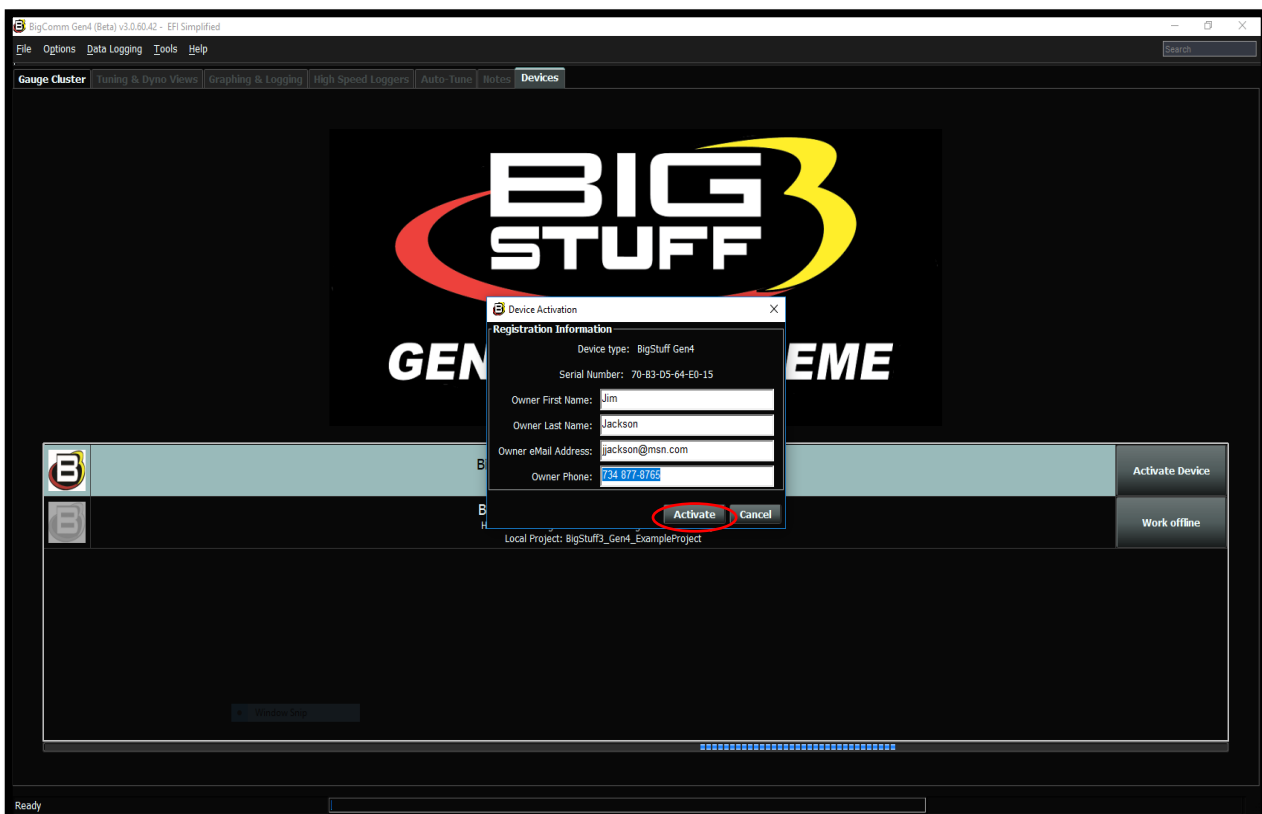
There are a couple of key things that occur when **Activate Device** is selected;

- The BCP software & GEN4 PRO XTREME ECU interface is activated by entering the end user-name and contact information.
- The BCP software creates an initial Project using the Serial Number (MAC ID) of the GEN4 PRO XTREME ECU connected to the PC running the BCP software and activation information. The initial Project contains preconfigured Gauge Clusters; aka “Dashboards”, Tuning & Dyno Views; aka “Tuning Tabs” and “Datalog Tabs” with predefined measurement variables.

Step 5.4 - Once **Activate Device** is selected in Step 5.3, the following BCP dialogue window will open.



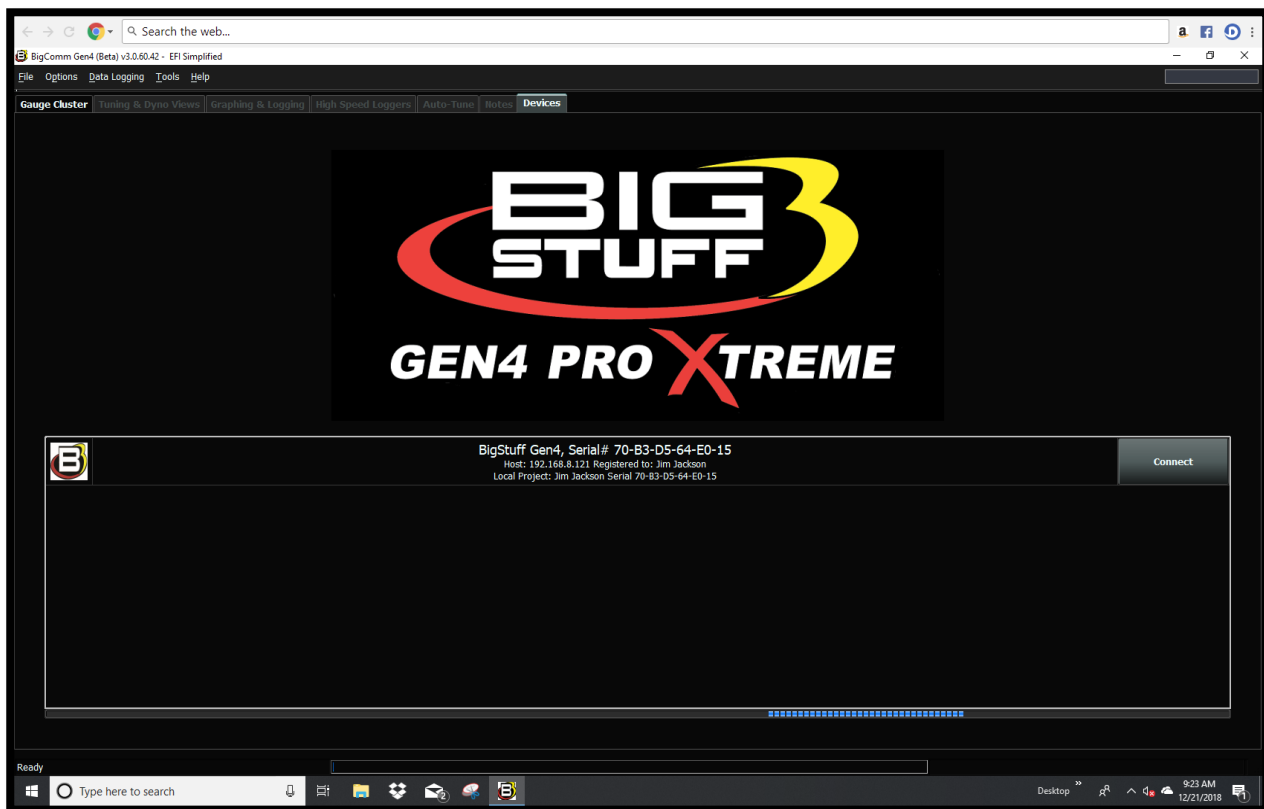
Step 5.5 - Fill in the requested activation information and single click on **Activate**.



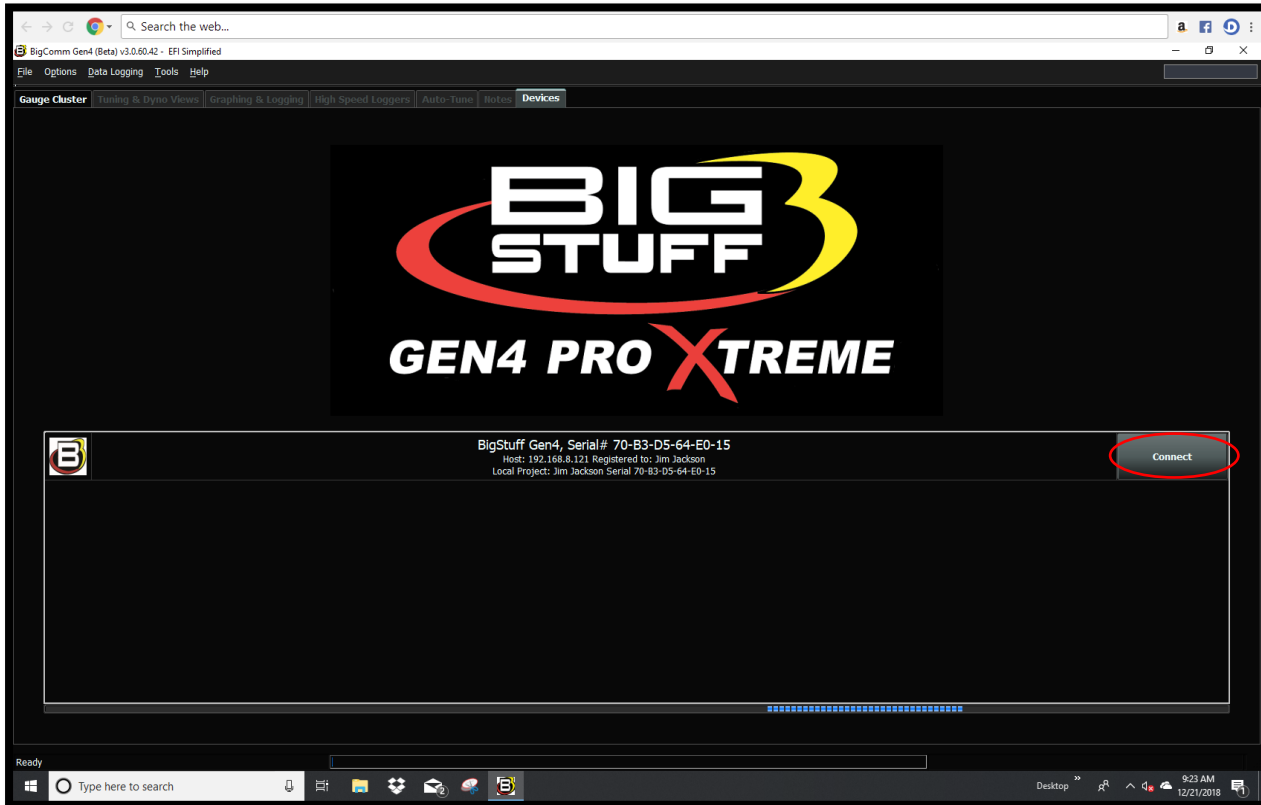
Step 5.6 – Once **Activate** is selected in Step 5.5, the following BCP software window will open. As you can see, there is now only one selection to choose from;

The **Bigstuff Gen4, Serial# 70-B3-D5-64-E0-15** is the Serial Number (MAC ID) of the GEN4 PRO XTREME ECU connected to the PC running the BCP software. Please note the Device Activation information (i.e. the owner's name, Jim Jackson for this example) filled out in Step 3.5 is now associated with the initial **Bigstuff Gen4, Serial# 70-B3-D5-64-E0-15** Project that will be uploaded into the BCP software running on the PC.

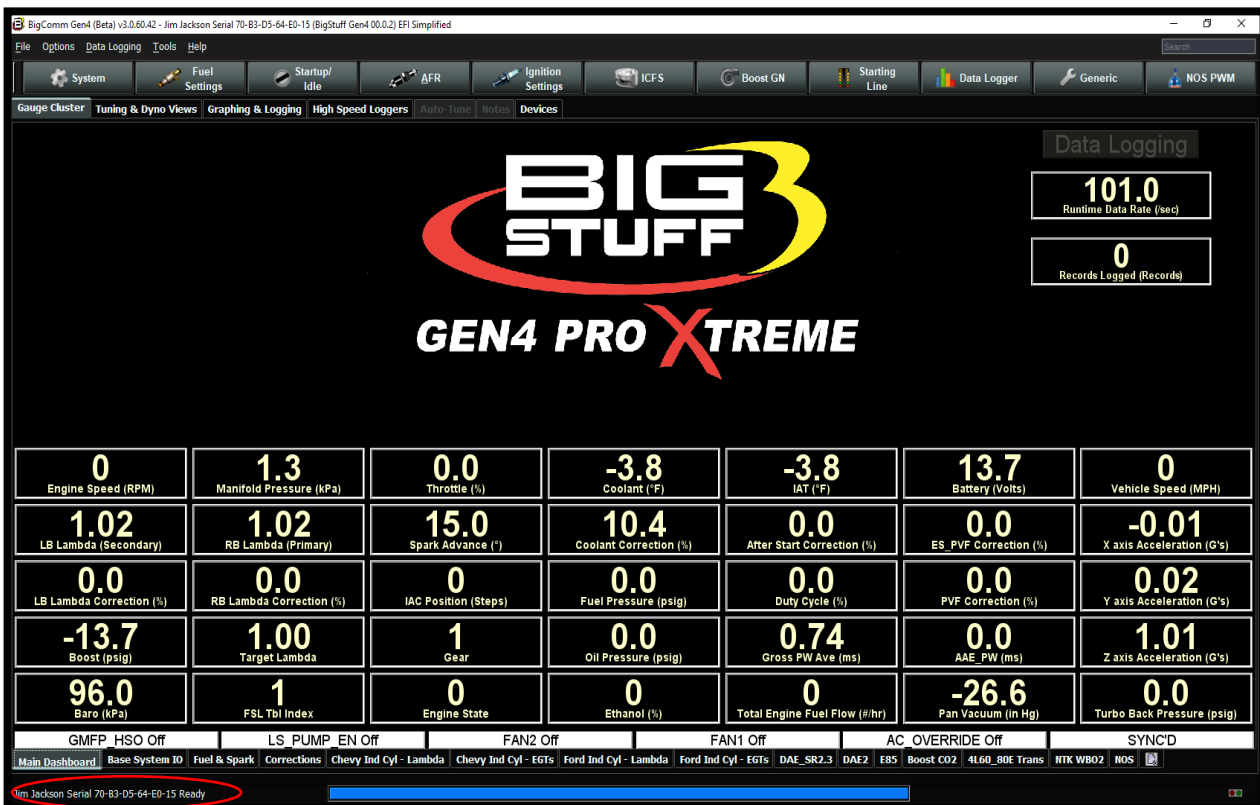
The previous default **Bigstuff Gen4, Serial# 22-33-44-55-66-77** serial number that had the example Local Project: **BigStuff3_GEN4_ExampleProject** associated with it has been removed. It was only intended to provide an example Project **BigStuff3_GEN4_ExampleProject** as part of the BCP software download package to navigate and get acquainted with the BCP software before establishing online communication.



Step 5.7 - To establish online communication between the BCP software running on the PC and GEN4 PRO XTREME ECU single click on **Connect**.



Step 5.8 - Below, is the BCP default **Main Dashboard** window that opens after selecting **Connect** in Step 5.7.



For this example, **Jim Jackson Serial 70-B3-D5-64-E0-15** is the Project running in the BCP software on the PC. For your application, **Your Name Serial 70-B3-D5-64-XX-XX** will be the Project running in the BCP software on the PC.

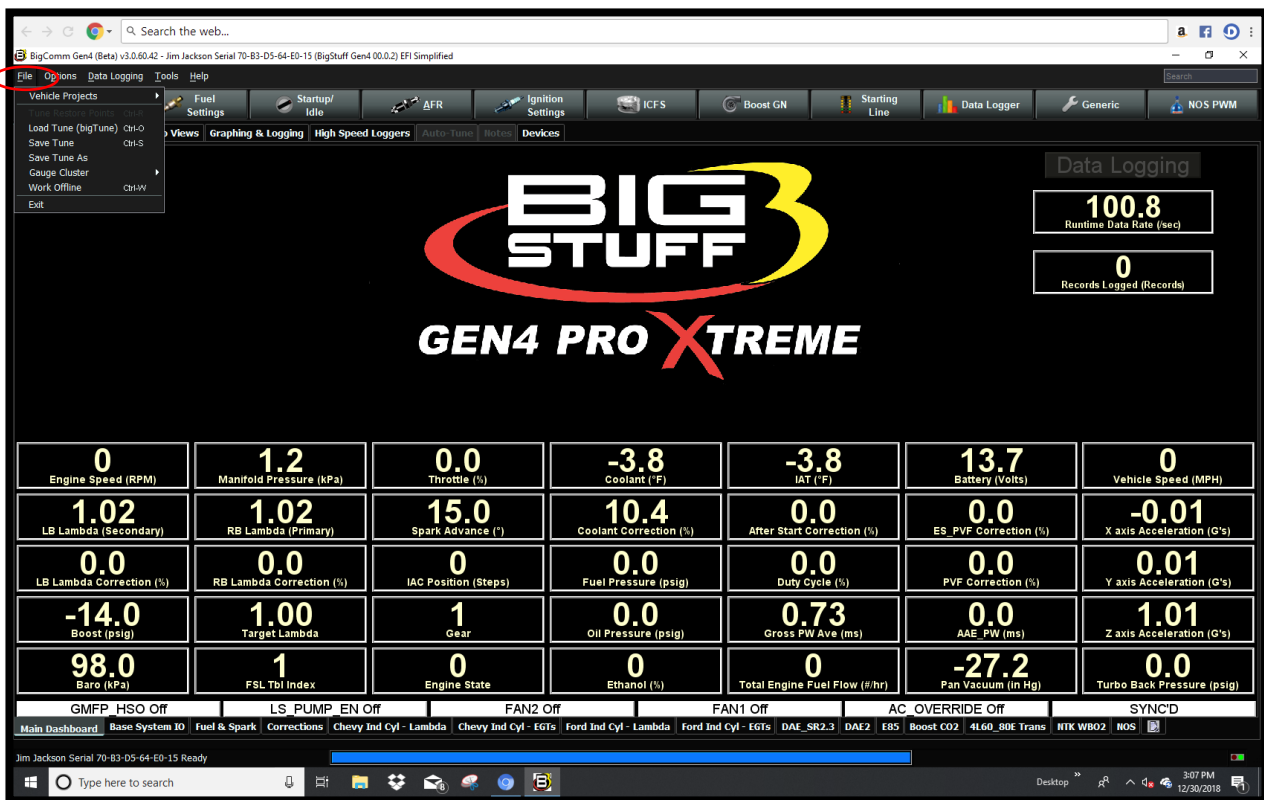
There are several key things that occur when **Connect** is selected;

- Online communication is established between the BCP software running on the PC and GEN4 PRO XTREME ECU.
- The calibration file included with the GEN4 PRO XTREME ECU is uploaded into the BCP software running on the PC.

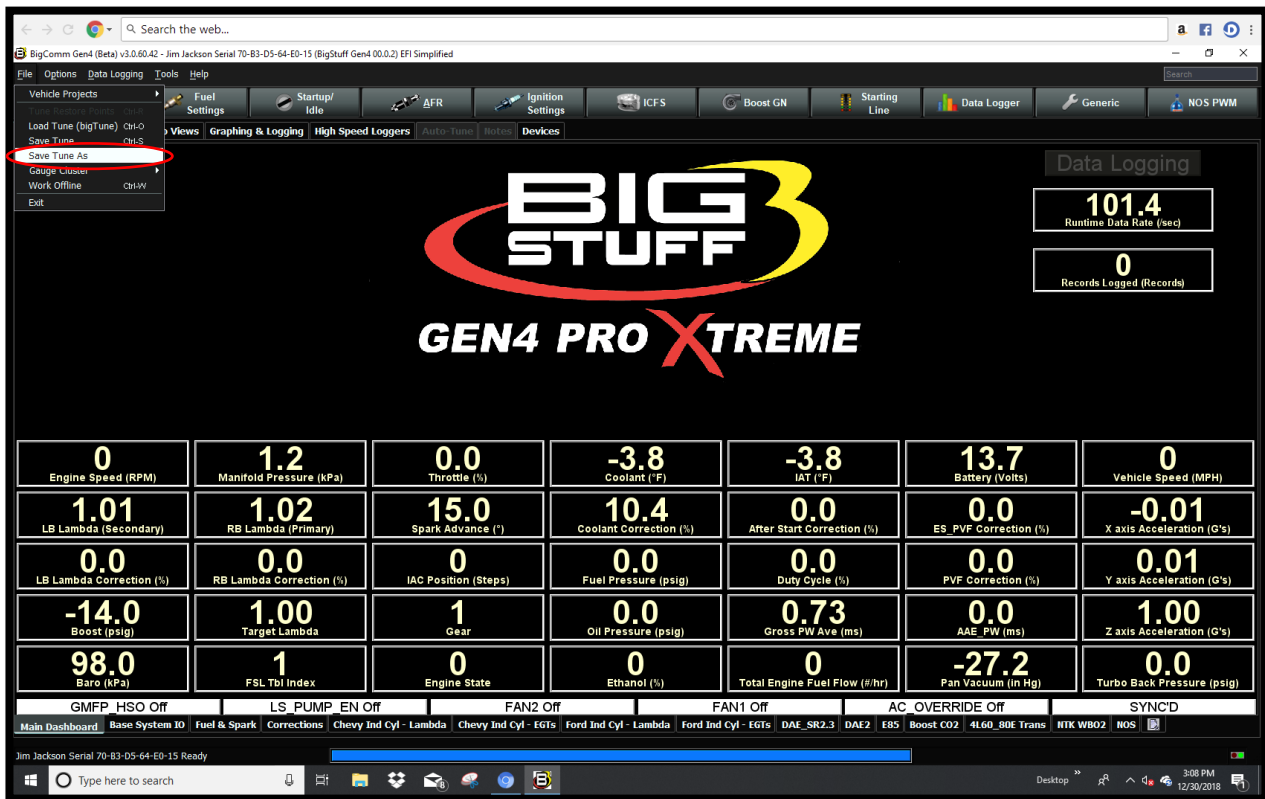
The next necessary step is to save the calibration file, also known as “Tune”, included with the GEN4 PRO XTREME ECU, into the initial Project. This is covered in Steps 5.9 thru 5.13 below.

The following steps describe how to save the calibration file, also known as “Tune”, included with the GEN4 PRO XTREME ECU into the initial Project. **(This only occurs when connecting between a PC running the BCP software and GEN4 PRO XTREME ECU for the first time)**

Step 5.9 - It is necessary to save the calibration file, also known as “Tune”, included with the GEN4 PRO XTREME ECU into the initial Project. This is straight forward and initiated by highlighting and left mouse clicking on File in the upper left hand-hand corner of the BCP software tool bar as shown below.

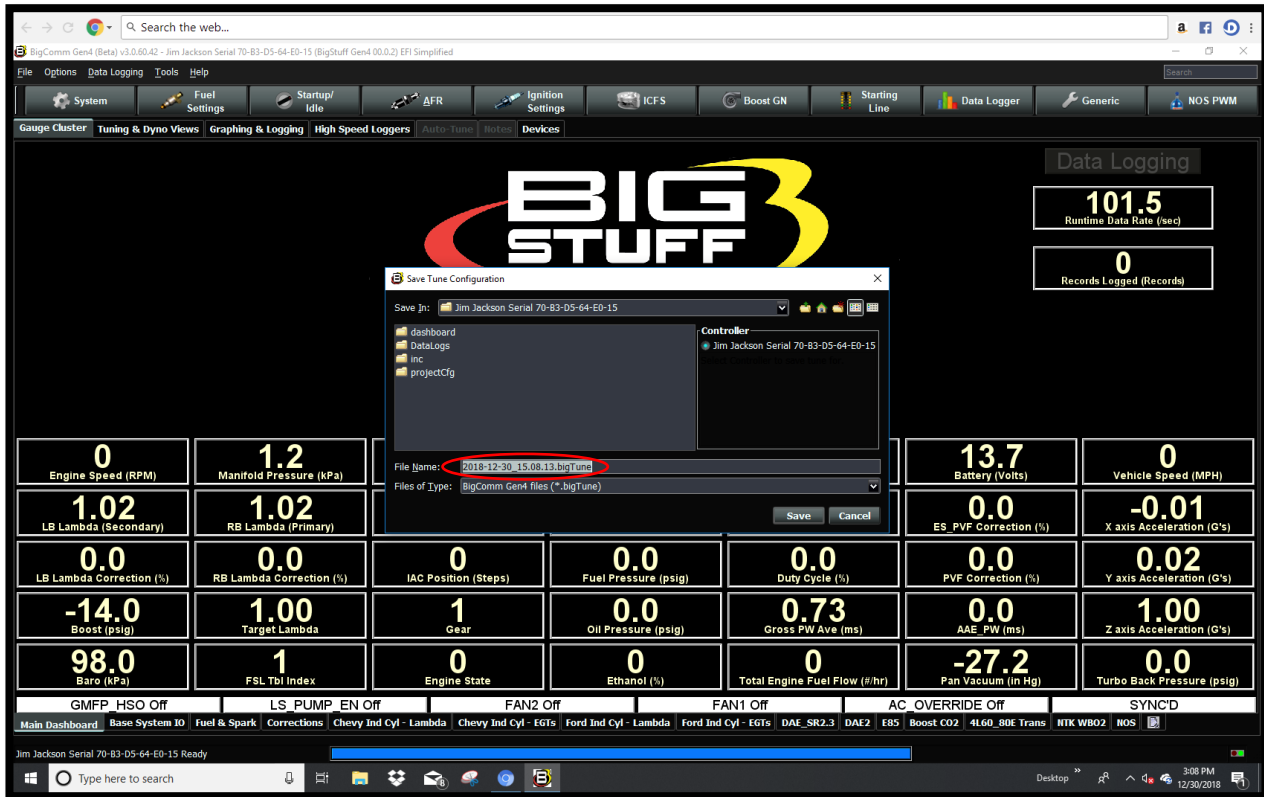


Step 5.10 - Once **File** is selected in Step 5.9, a drop-down window will open. Once opened, highlight and left mouse click on **Save Tune As** as shown below.



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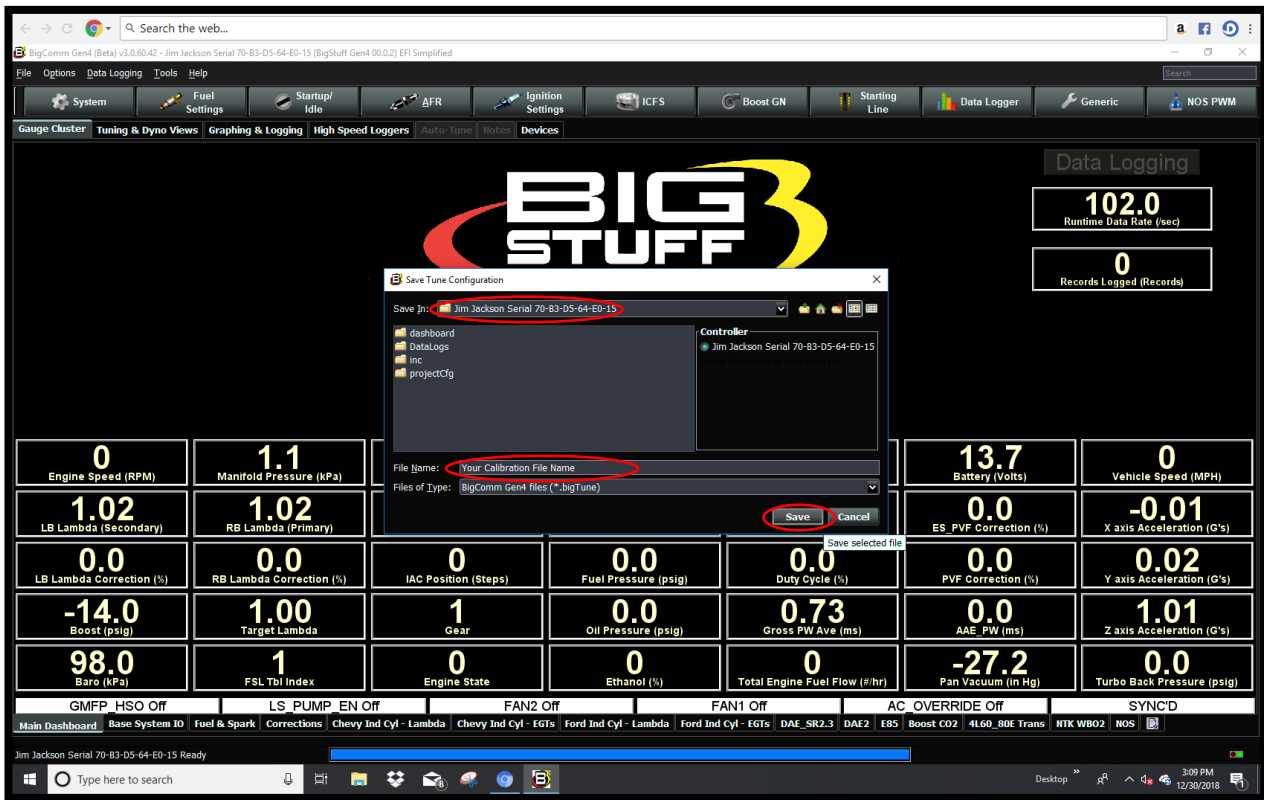
Step 5.11 - Once **Save Tune As** is selected in Step 5.10, a **Save Tune Configuration** dialogue window will open as shown below. Once opened, you will see a BCP **File Name** automatically assigned to the calibration file as shown below. The automatically assigned calibration file name for this example is **2018-12-30_15.08.13.bigTune**, which is the date and time the calibration file is saved.



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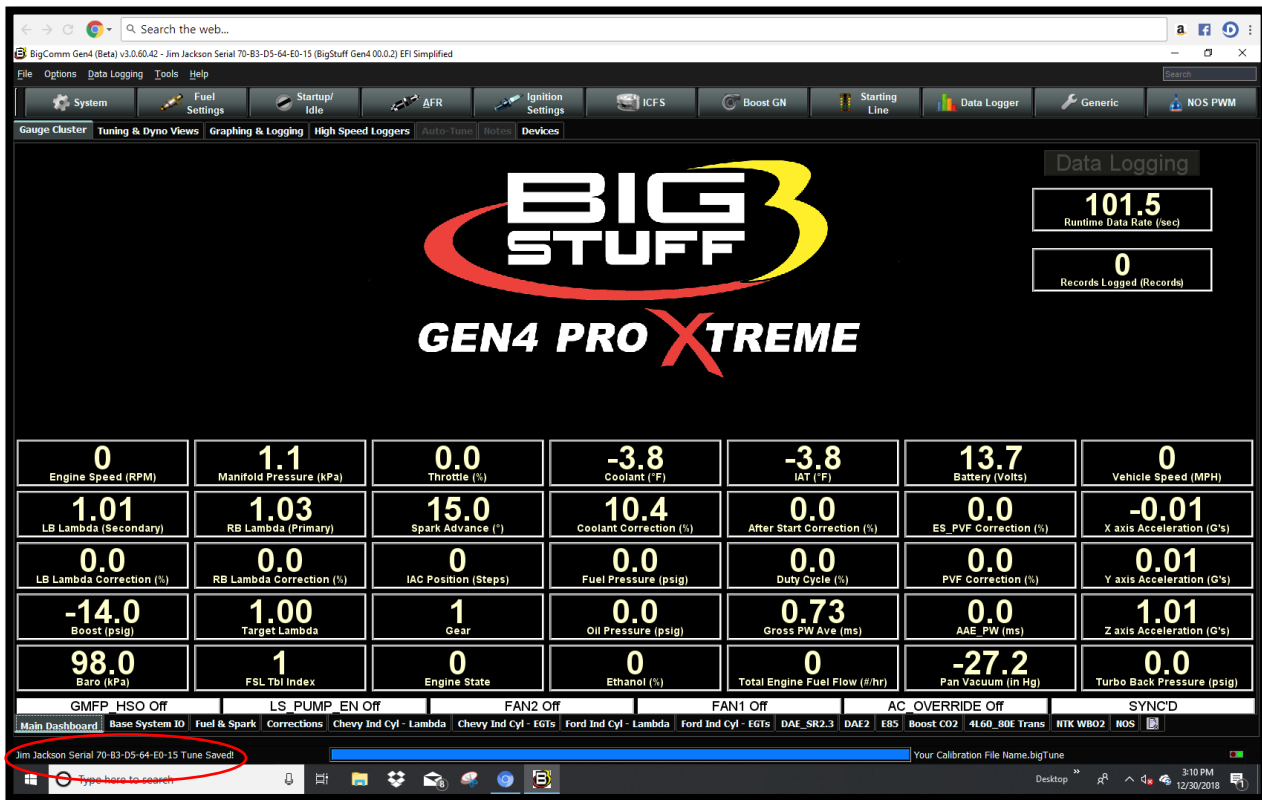
Step 5.12 - You can overwrite the automatically assigned calibration File Name with a naming convention of your choice by highlighting and typing a file name over the automatically assigned BCP software File Name. For this example, the calibration File Name is **Your Calibration File Name**.

Once the new calibration File Name is typed in, left mouse click on Save. Once Save is selected the BCP software will automatically add the **.bigTune** suffix to the file name while saving the calibration file into the Project file associated with the GEN4 PRO XTREME ECU currently connected to the PC running the BCP software. For this example, the calibration file will be saved into the **Jim Jackson Serial 70-B3-D5-64-E0-15** Project File.



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Step 5.13 – Once **Save** is selected in Step 5.12, the following BCP window will open showing the **Jim Jackson Serial 70-B3-D5-64-E0-15 Tune Saved!** message in the lower left-hand corner of the BCP window as shown below.



That's it... You're now communicating online via a Wired or Wireless Ethernet connection between the PC running the BigComm Pro software and GEN4 PRO XTREME ECU with the initial Project loaded and calibration saved into the GEN4 PRO XTREME ECU.

Key Note: You must go through a +12V switched ignition key cycle (key on/off/on) in order to establish online communication with a different GEN4 PRO XTREME ECU!

The balance of the instructions will focus on how to "use" the BigComm Pro software as a graphical user interface to calibrate, measure and record all accessible parameters available to the GEN4 PRO XTREME system.

This manual has been put together so you can learn and apply the changes as quick as possible to your ECU.

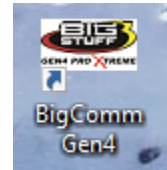
Please don't forget to check out our FAQ section for the most common questions asked about the software answered in one area.

6. NAVIGATING THE BIGCOMM PRO SOFTWARE FOR THE FIRST TIME

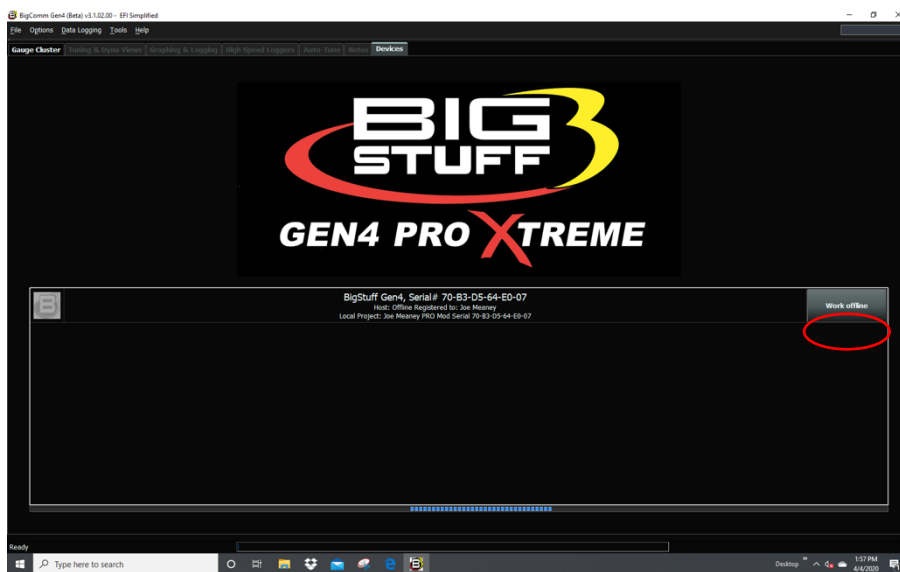
[Back to Table of Contents](#)

Once you have downloaded the BigComm Pro software onto a PC as detailed in the previous steps, you can now begin to navigate it offline (PC only) or online (live communication between PC running BigComm Pro software and GEN4 PRO XTREME ECU). Dependent on whether your offline or online will dictate, which of the initial BigComm Pro window opens when launching the BigComm Pro software.

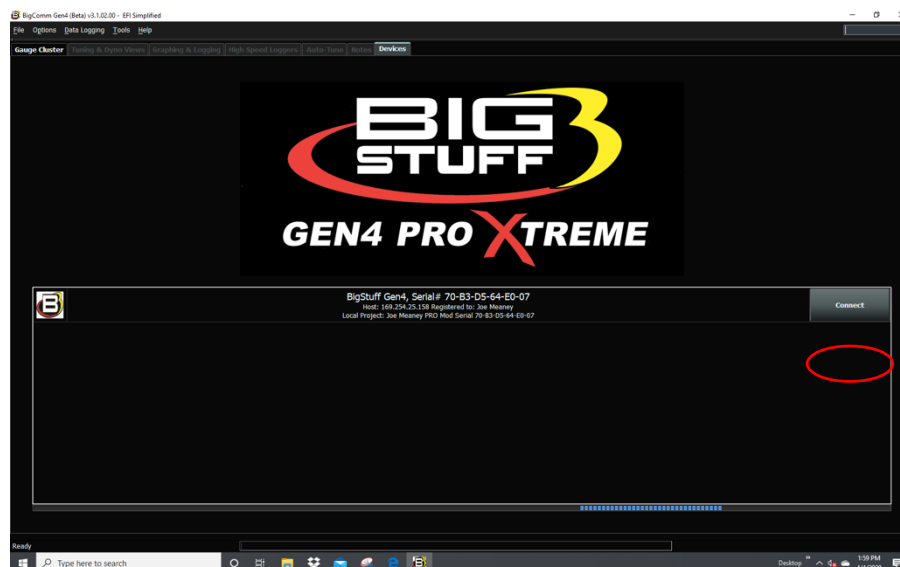
Below, are the initial BigComm Pro screen screenshots that will open after double clicking on the BigComm GEN4 shortcut Icon found on your PC's desktop and shown to the right.



Initial "Offline" BigComm Pro launch window - "Work offline"

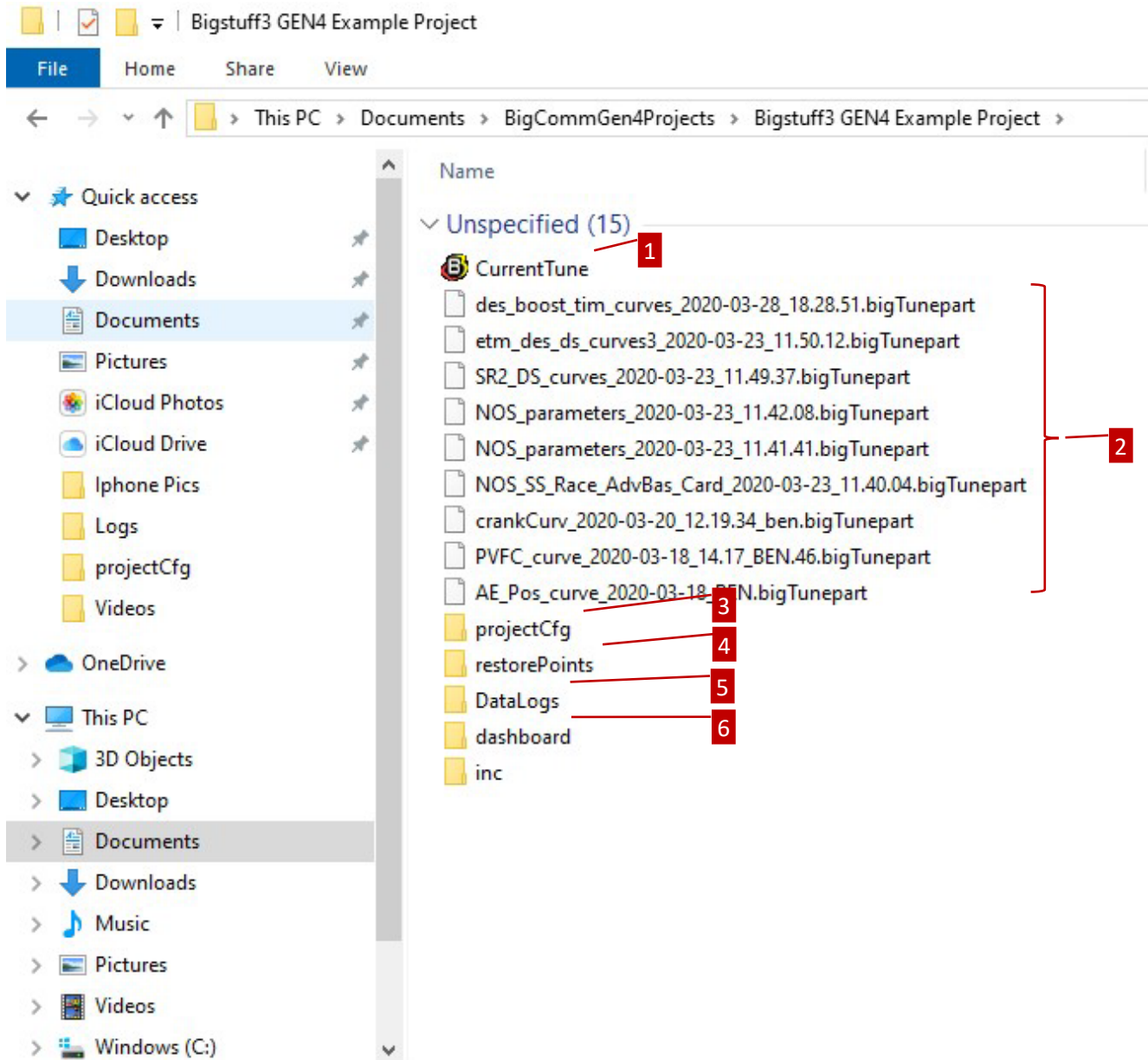


Initial "Online" BigComm Pro launch window - "Connect"




From a user standpoint, the BigComm Pro software will operate the same whether you're offline or online.

Before we get into the software and how the nuts bolts are all turned let's get you familiar with how BigComm Pro is used. BigComm Pro GEN4 software is a comprehensive software suite that will contain all of your tuneups, datalogs, project backups, and individual saved tables. These files will be stored in the Documents folder on your computer



C:\Users\YourComputer\Documents\BigCommGen4Projects. See the following picture for more detail.

1. The **CurrentTune** is the most recent tuneup that BigComm Pro has automatically saved as your working on  your Project. The icon indicates a BigCommPro tuneup you can open.
2. A **.bigTunepart** file is an individual backup of a table or chart from your tuneup. You can create as many as you like per table. This will be described in more detail in the bigTunepart how to [in Section 3 of this manual](#).
3. The **projectCfg** file is where the project system files are located.
4. The **restorePoints** folder is where BigCommPro creates automatic project backups as you are working on your project. This feature is similar to Windows Restore in that it creates backups as you are working in case you want to go back to an earlier date/time in your project. See restorePoints how to in Section 3 of this manual.
5. The **DataLogs** folder is where all datalogs will be stored whether they are started manually on your computer or when you upload the replays out of the MicroSD card.
6. The **dashboard** folder is where all of your dashboards will be stored. Your custom created dashboards will be stored there as well.

Now that you know how the file structure works and where your files will be stored let's get started on how to work inside a BigComm Pro Project.

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7. WORKING WITH THE INITIAL OFFLINE BIGCOMM PRO LAUNCH WINDOW

[Back to Table of Contents](#)

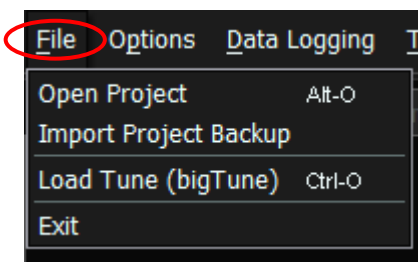
The following instructions detail how to work with the initial offline BigComm Pro launch window as shown below. An overview will be provided for each of the highlighted items.



The following instructions detail how to work with the initial offline BigComm Pro launch window as it relates to the **Offline File, Options, Data Logging, Tools & Help Tool Bar**.

Offline File, Options, Data Logging, Tools & Help Tool Bar:

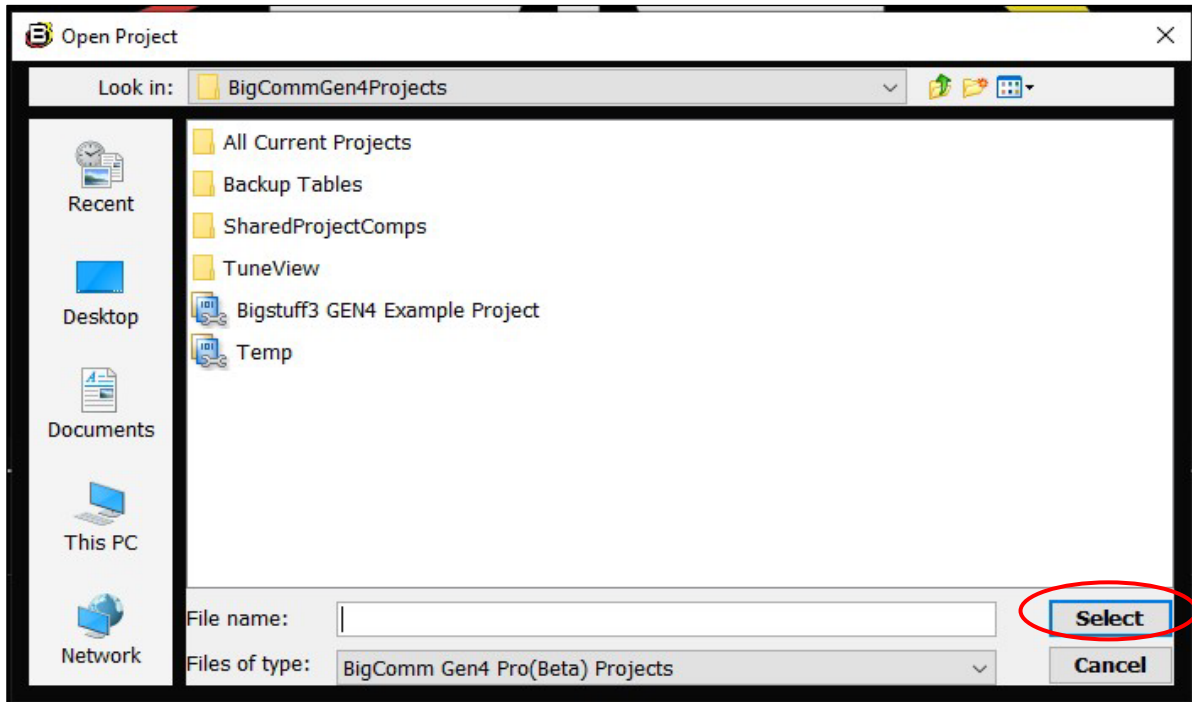
There are 5 pulldown menu options included in the **Offline File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The first is **File**. Left click on **File** and the following submenu will open.



Note: An online Project has more options available under the **File** dropdown. This will be covered later in the instructions under **Section 8. Working with an online BigComm Pro Project**.

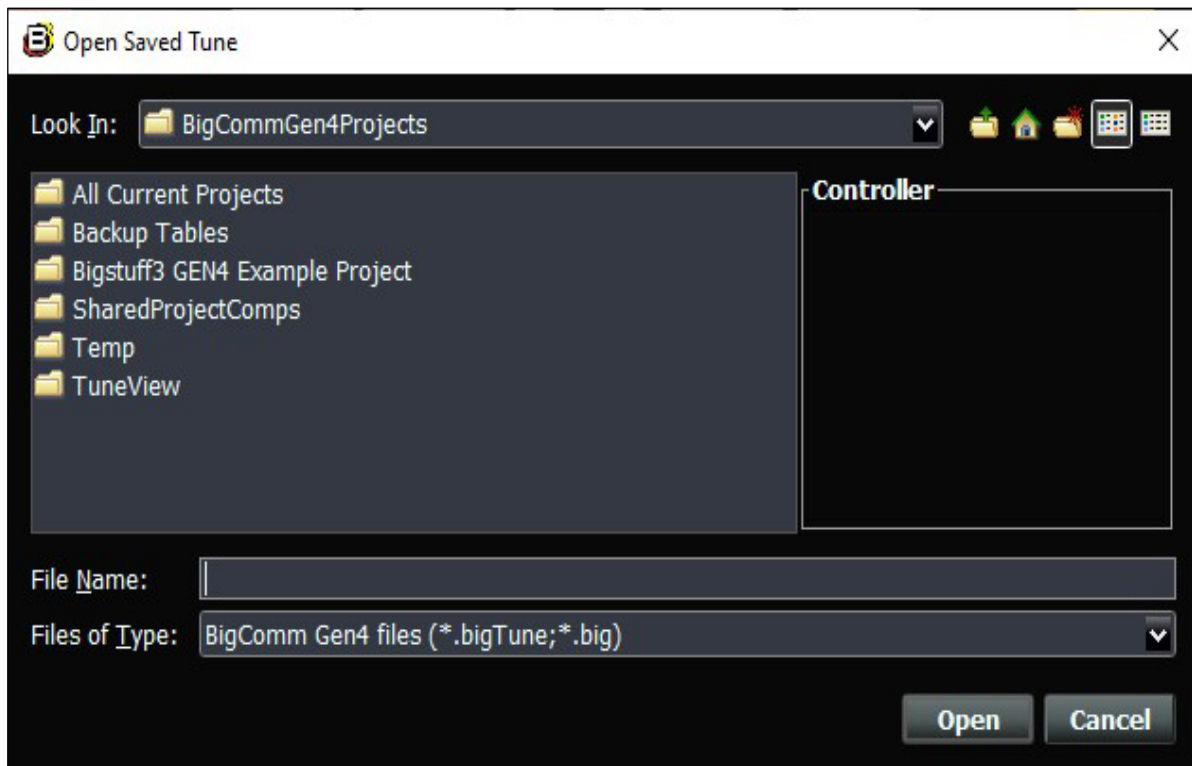
File: Under the **File** dropdown submenu you can open an existing Project, import a Project backup, load an existing tune or exit the program.

- Select **Open Project** to open an existing Project. Do so by selecting **File → Open Project** in the pulldown menu or press ALT+O and select the **Project** you want to open on your computer. Press **Select** to finish and open.



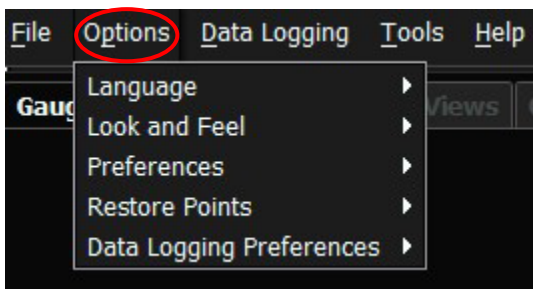
- Select **Import Project Backup** to import a Project Backup file.

- Select **Load Tune (bigTune)** to load a saved tune from a Project. Do so by selecting **File** → **Load Tune (bigTune)** in the pulldown menu or press CLT+O and then select and open the **.bigtune** calibration file you want to open on your computer.



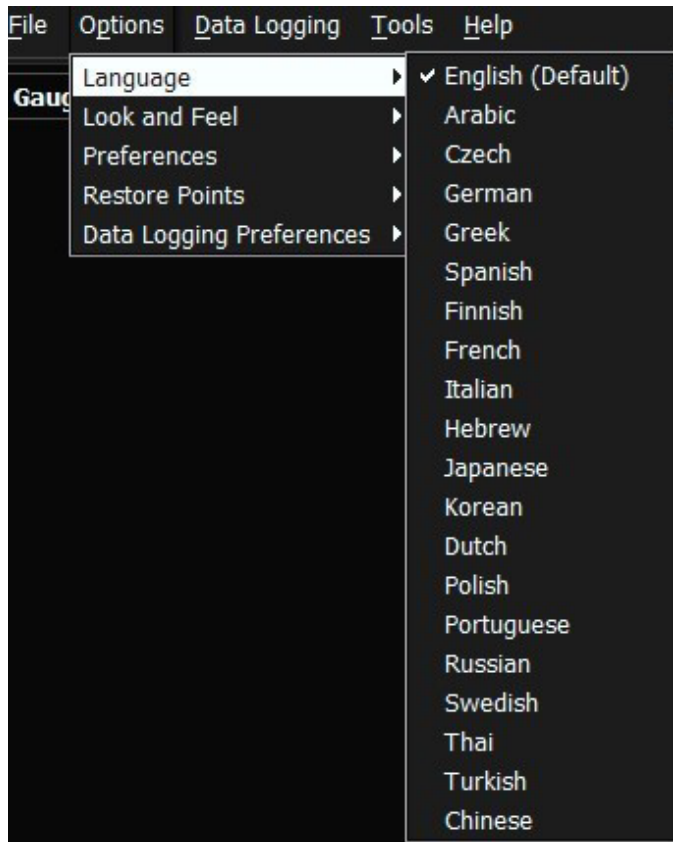
- Select **Exit** to exit out of BigComm Pro.

There are 5 pulldown menu options included in the **Offline File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The second is **Options**. Left click on **Options** and the following submenu will open.

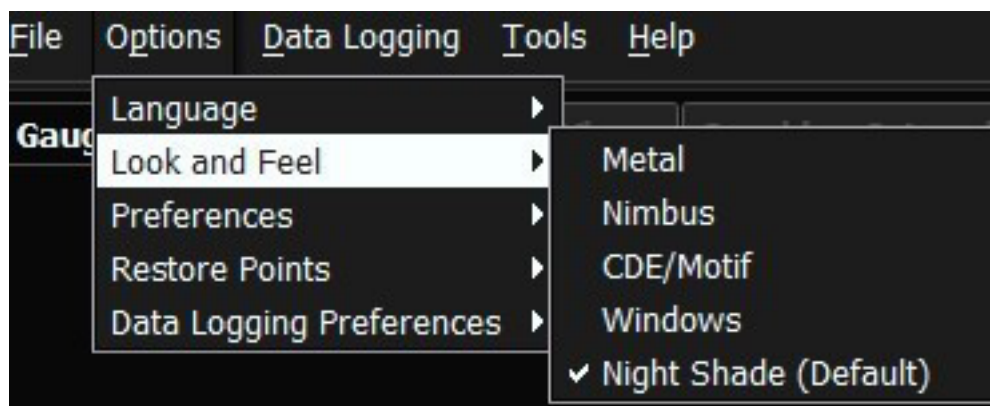


Options: Under the **Options** dropdown submenu you can choose your default Language, the Look and Feel of the software, software Preferences, Project Restore Points, and Data Logging Preferences.

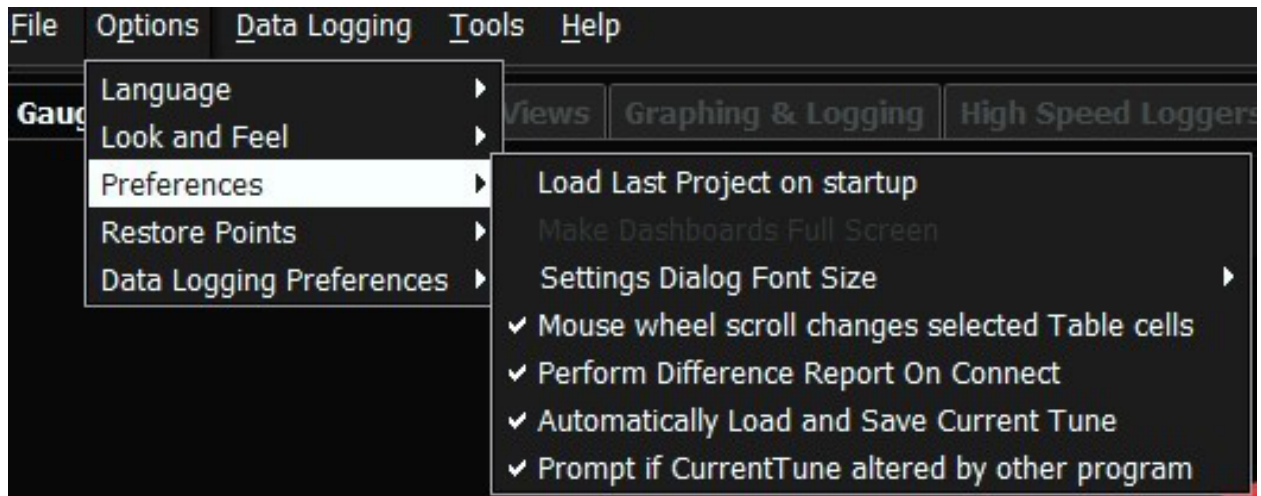
- Select **Language** to choose your default language. Do so by selecting **Options** → **Language** in the pulldown then select the desired language from the options in the pulldown menu. You will need to restart the BigComm Pro software for the changes to take effect.



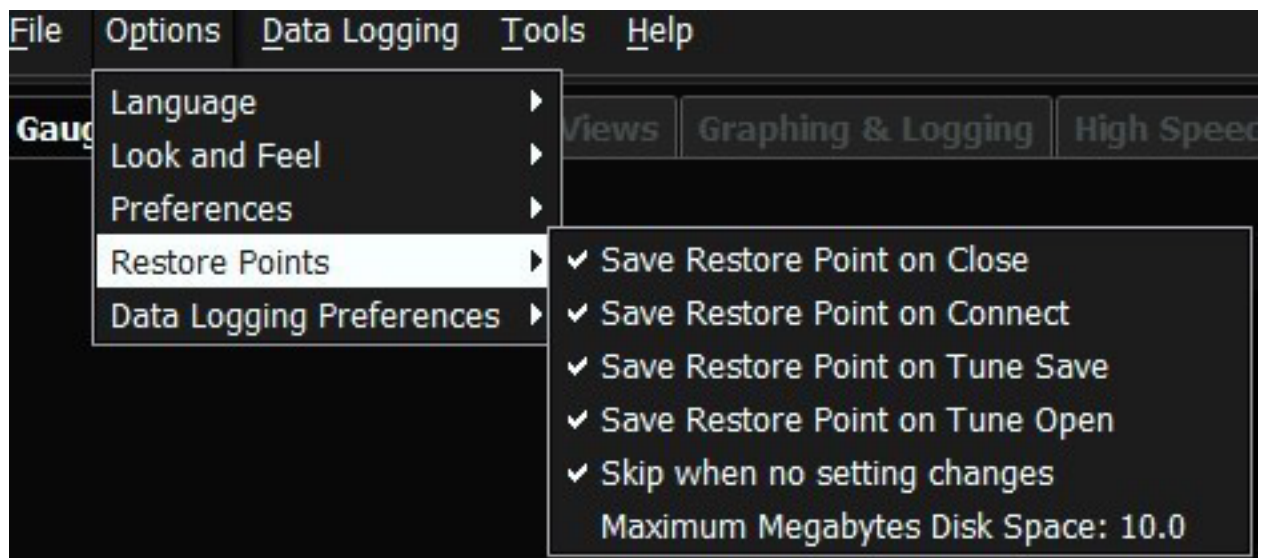
- Select **Look and Feel** to set up the BigComm Pro software look and feel. Do so by selecting **Options** → **Look and Feel** in the pulldown and then select from one of the desired software layout the options in the pulldown menu. You will need to restart the BigComm Pro software for the changes to take effect.



- Select **Preferences** to set up the BigComm Pro software preferences. Do so by selecting **Options** → **Preferences** in the pulldown and then select the desired software preferences from the options in the pulldown menu. These will allow you to configure how you want to interact with the BigComm Pro software. The default settings will satisfy the most users requirements.

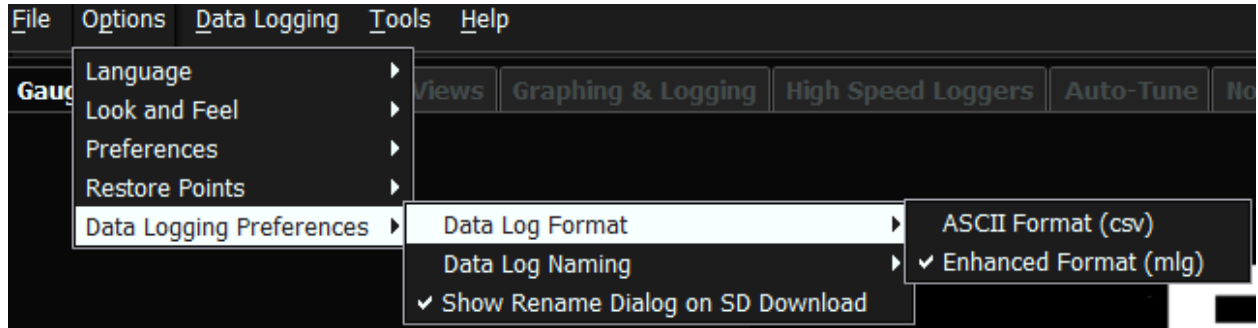


- Select **Restore Points** to set up the BigComm Pro software restore points. Do so by selecting **Options** → **Restore Points** in the pulldown and then select the desired software Restore Points from the options in the pulldown menu. The default settings will satisfy the most users requirements.

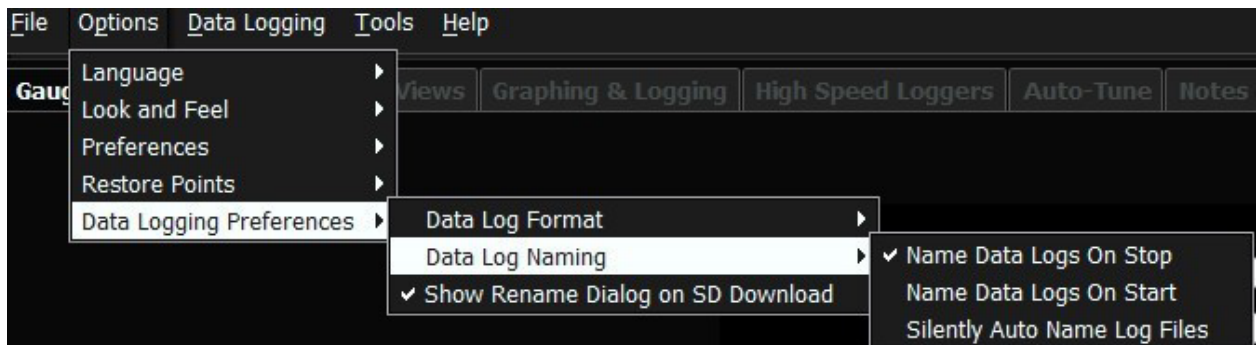


- Select **Data Logging Preferences** to set up the BigComm Pro software Data Logging Preferences. Do so by selecting **Options** → **Data Logging Preferences** in the pulldown and then select the desired Data Log Format and Data Log Naming from the options in the pulldown menus.

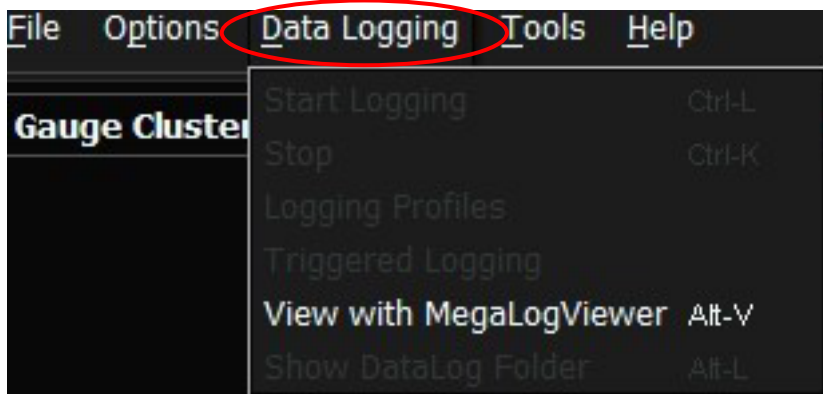
For the Data Log Format you can choose between ASCII Format (.CSV) or Enhanced Format (.MLG). Select .CSV if you want to plug the data log information into a spreadsheet. .MLG is the default and recommended file extension for BigComm Pro.



For the Data Log Naming you can choose how to label the data logs on the start or stop of the data log or have the software silently auto name the log files. The default settings will satisfy the requirements of most users.

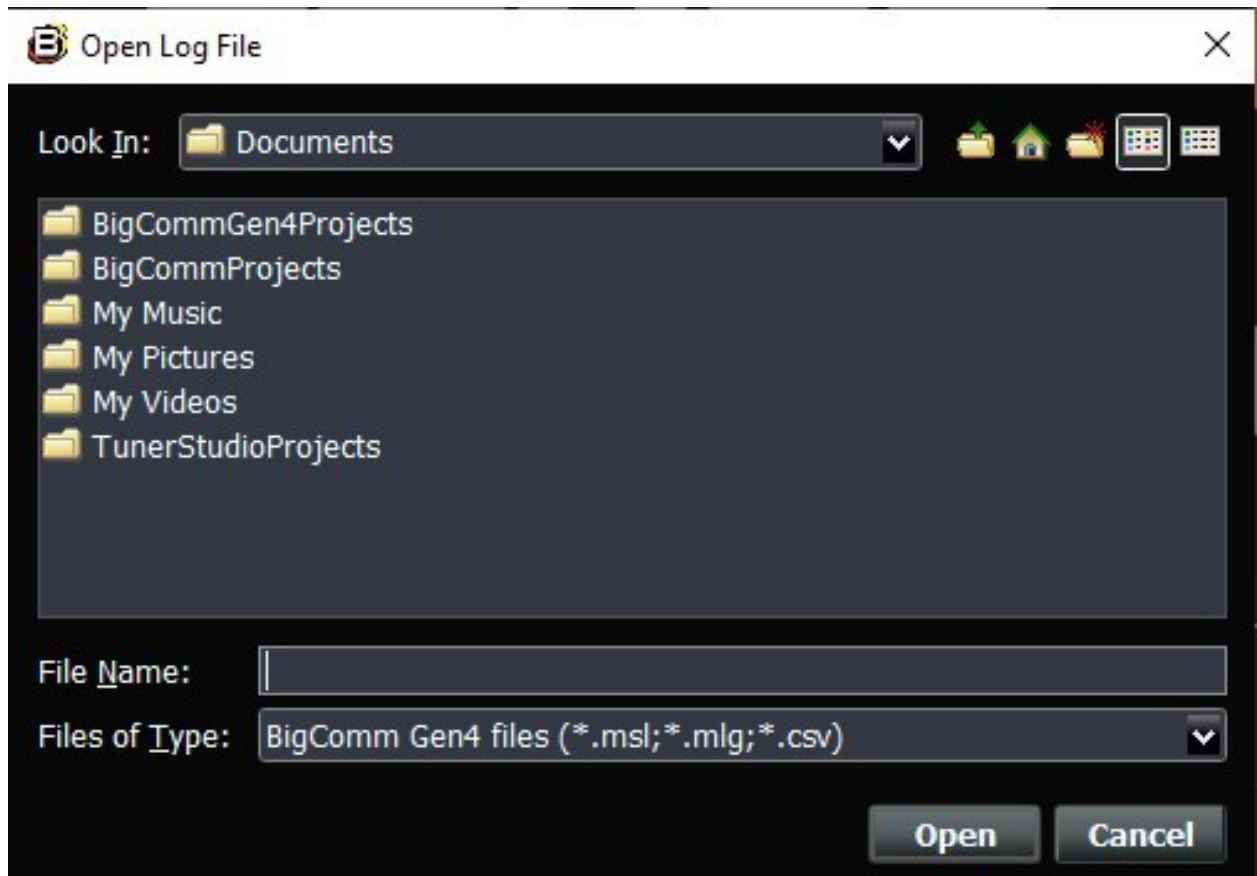


There are 5 pulldown menu options included in the **Offline File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The third is **Data Logging**. Left click on **Data Logging** and the following submenu will open.

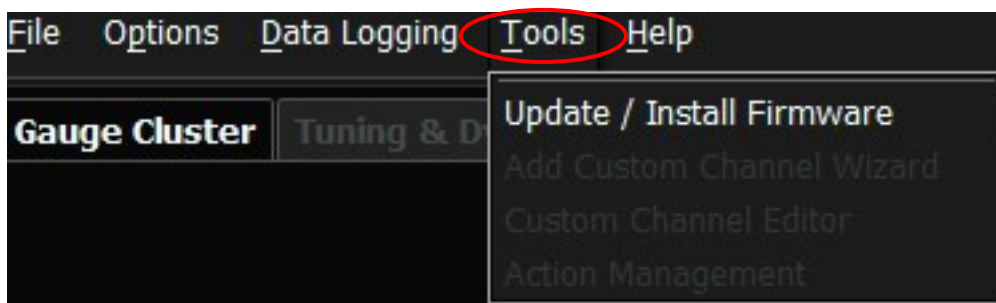


Data Logging: Under the **Data Logging** dropdown submenu you can choose if you want to view the Data Log file with the MegaLog Viewer.

- Select **View with MegaLog Viewer** to set up the BigComm Pro software to view the data log data in MegaLogViewer. You will need to download the MegaLogViewer software from the www.BigCommPro.com website. Once the MegaLogViewer software is downloaded onto your PC, select **Data Logging** → **View with MegaLogViewer** or by pressing Alt-V in the pulldown and then select the desired log file when the window opens.



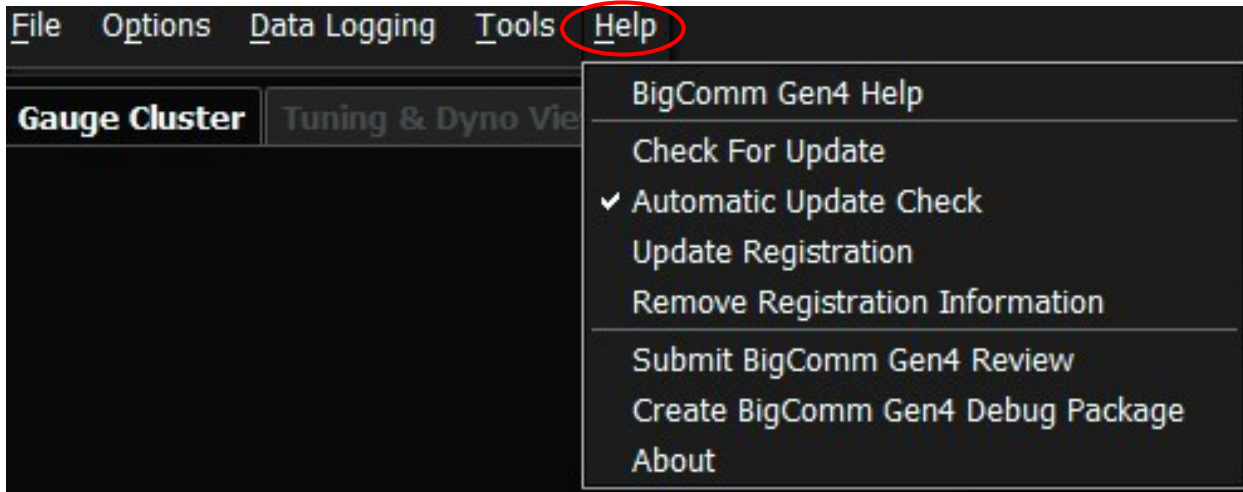
There are 5 pulldown menu options included in the **Offline File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The fourth is **Tools**. Left click on **Tools** and the following submenu will open.



Tools: Under the **Tools** dropdown submenu you can choose to update and install a new GEN4 PRO XTREME firmware. This is described further under the online Project section of the instructions.

- Select **Tools** to update and install a new GEN4 PRO XTREME firmware. Do so by selecting **Tools → Update / Install Firmware** in the dropdown. **Tools** only has the ability to update/install firmware when a Project is not open.

There are 5 pulldown menu options included in the **Offline File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The fifth is **Help**. Left click on **Help** and the following submenu will open.



Help: Under the **Help** dropdown submenu you can choose from a number of Help related options as detailed below.

- Select **Help** to choose from a number of Help related options. Do so by selecting **Help** to show the Help dropdown submenu options.
- The **Help** menu is where BigCommPro lets you:
 - **BigComm Gen4 Help** - Provides access to additional online/offline help information. The **BigComm Gen4 Help** provides additional details for many of the BigComm Pro software capabilities and should be considered as a key source for helpful information.

- **Check for Update** - Allows BigCommPro to check for a software update if your connected to the internet.
- **Automatic Update Check** - Automatically checks for a BigComm Pro software update every time BigCommPro boots up and there is an internet connection.
- **Update Registration** - Allows you to Update your Registration after purchasing a software key to enable all of the BigComm Pro features.
- **Remove Registration Information** - Allows you to remove your registration from the current computer running the BigCommPro software.
- **Submit BigCom Gen4 Review** - Allows you to submit a review of BigCommPro software.
- **Create BigCom Gen4 Debug Package** - Allows you to create a BigCommPro debug package.
- **About** - Provide details for the current version of your BigComm Pro software.

The following instructions detail how to work with the initial offline BigComm Pro launch window as it relates to the **Offline Gauge Cluster & Devices Tool Bar**.

Offline Gauge Cluster & Devices Tool Bar:

When initially working with an offline BigComm Pro project the **Gauge Cluster** and **Devices** tabs are only available.

- The **Devices** tab lists the current Projects on your computer screen.
- The **Gauge Cluster** tab provides the ability to open a project and shortcuts to helpful links about the software.

Search:

There is no Search functionality relative to the initial offline BigComm Pro launch window. The Search functionality works once the offline or online BigComm Pro main default launch window is opened. Further details will be provided in Section 8 - Working with an online BigComm Pro Project.

Work offline selection button:

The **Work offline** selection button is selected to open an offline Project.

8. WORKING WITH AN ONLINE BIGCOMM PRO PROJECT

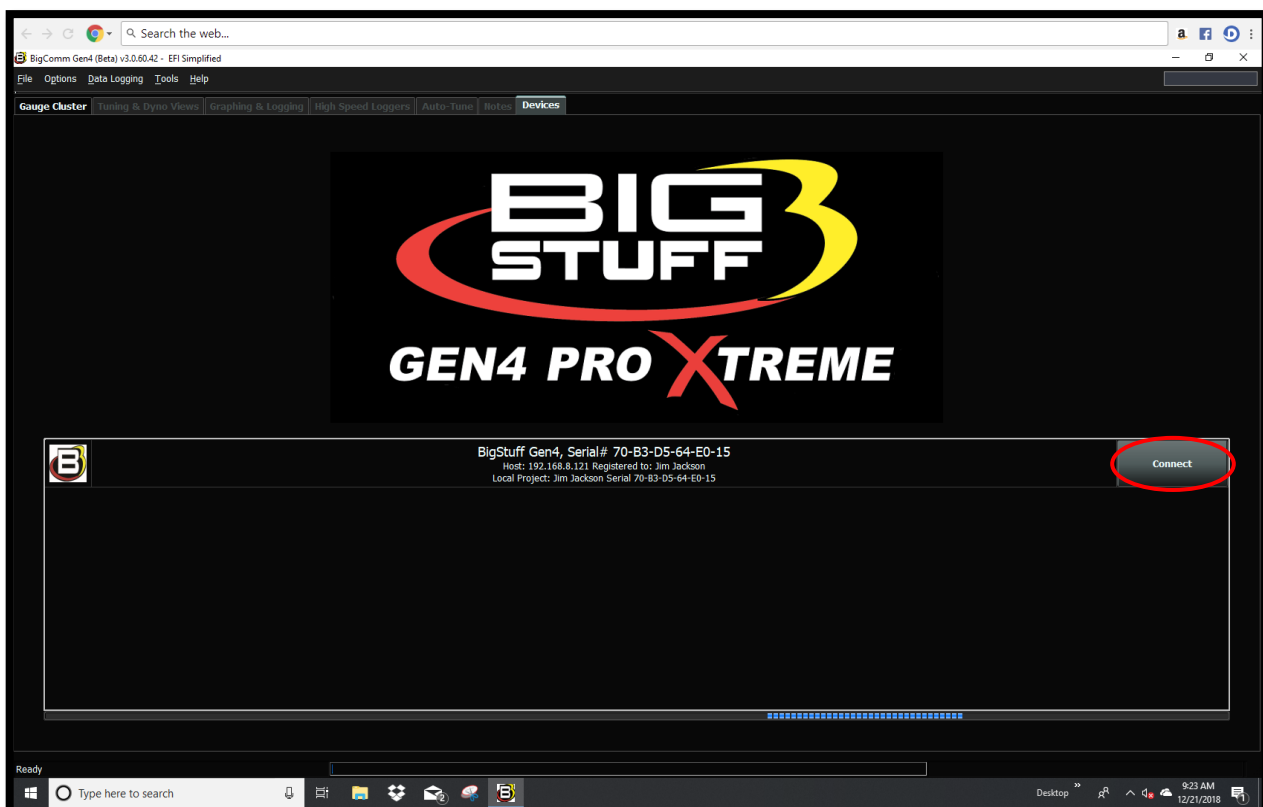
[Back to Table of Contents](#)

The following instructions detail how to work with an online BigComm Pro Project and utilize all of the BigComm Pro functionality relative to the BigComm Pro main default launch window.

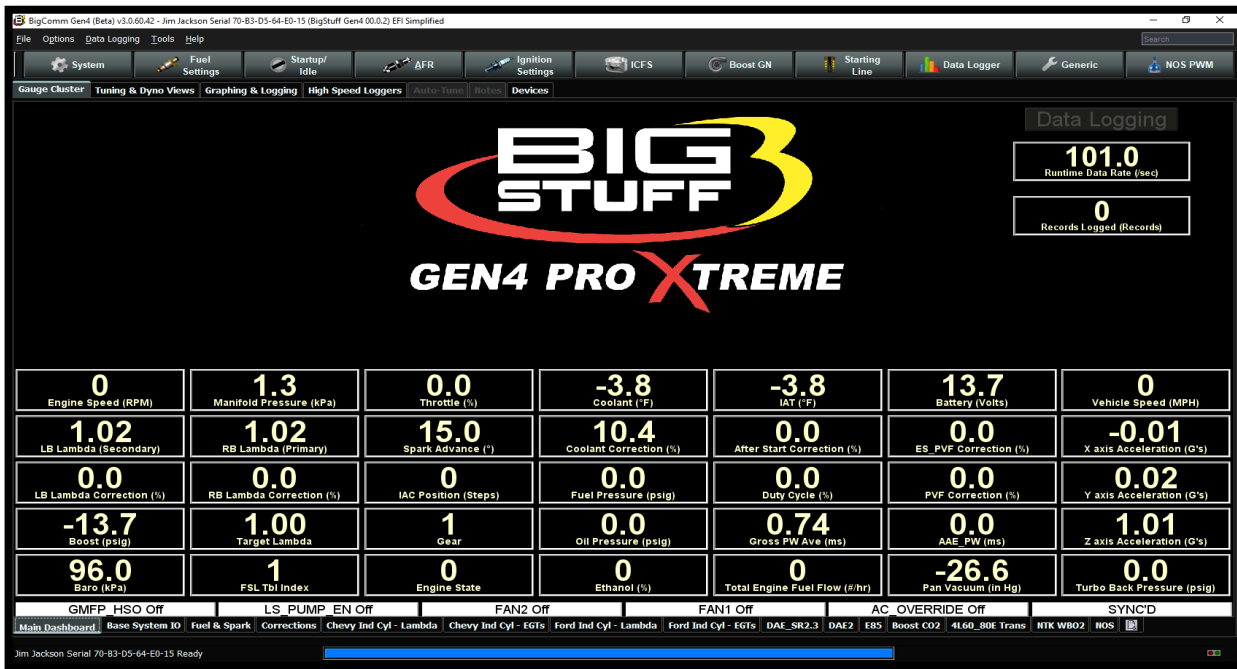
Note: Most of the online BigComm Pro software functionality also pertains to offline BigComm Pro software functionality. Therefore, for the sake of redundancy, these instructions will only cover the online BigComm Pro software functionality.

At this point it is assumed, the GEN4 PRO XTREME ECU is powered on (VBATT (+), VBATT (-) & +12V switched Ignition), and a Wired or Wireless Ethernet Network connection is established between the PC running the BigComm Pro software and GEN4 PRO XTREME ECU.

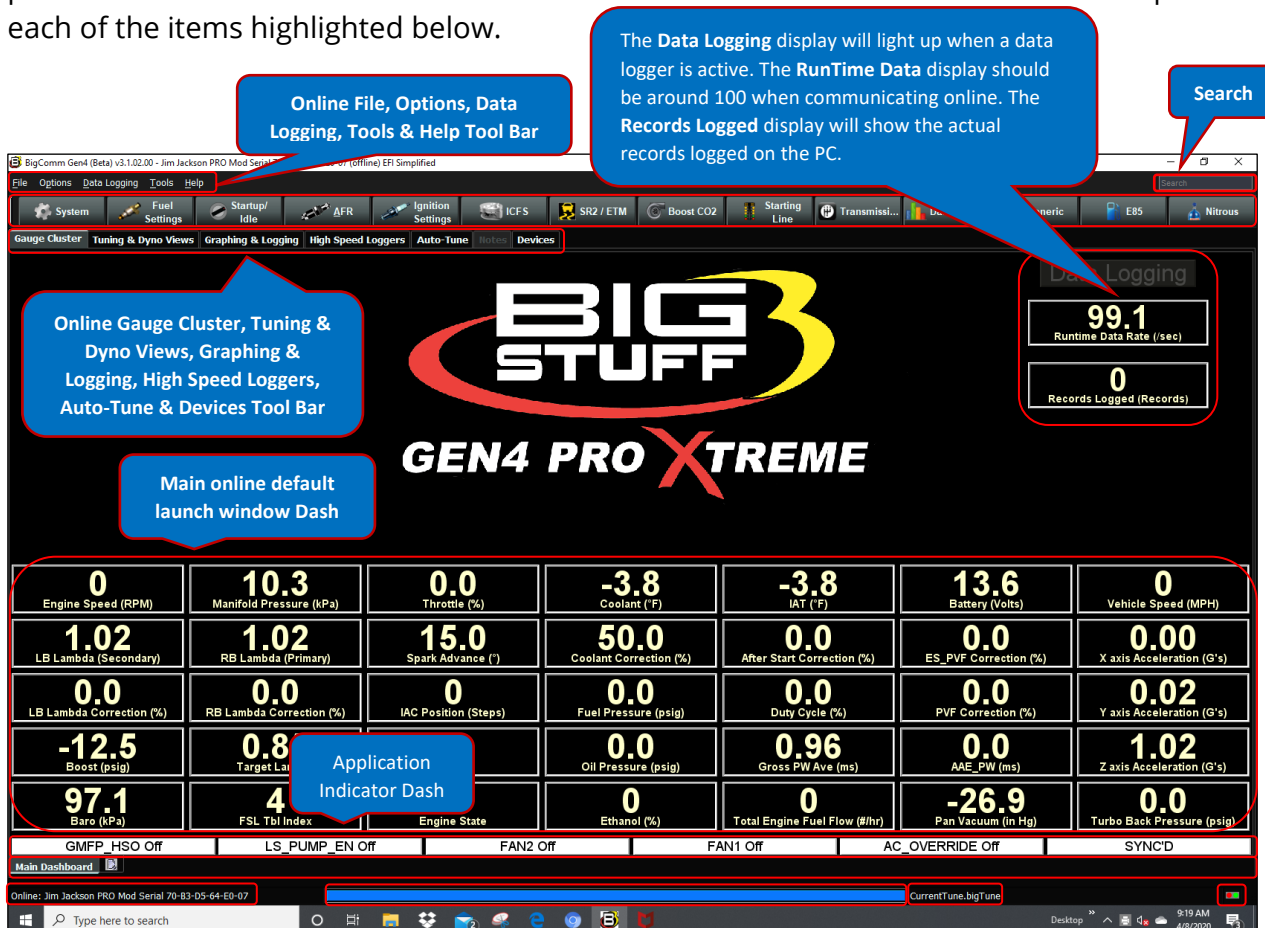
After double mouse clicking on the **Connect**, the BigComm Pro's main online default launch window will open as shown below on page 53.



BigComm Pro main online default launch window



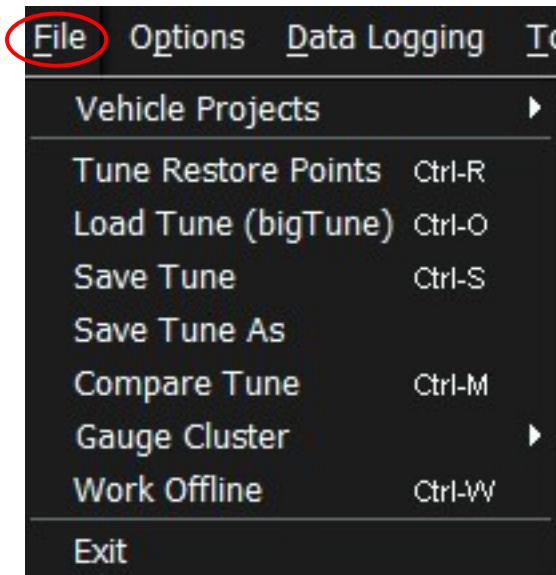
The following instructions detail how to navigate and utilize all of the BigComm Pro functionalities relative to the main online default launch window. The following instructions pertain to all online use cases and most of the offline use cases. An overview will be provided for each of the items highlighted below.



9. BIGCOMM PRO ONLINE FILE, OPTIONS, DATA LOGGING, TOOLS & HELP TOOL BAR

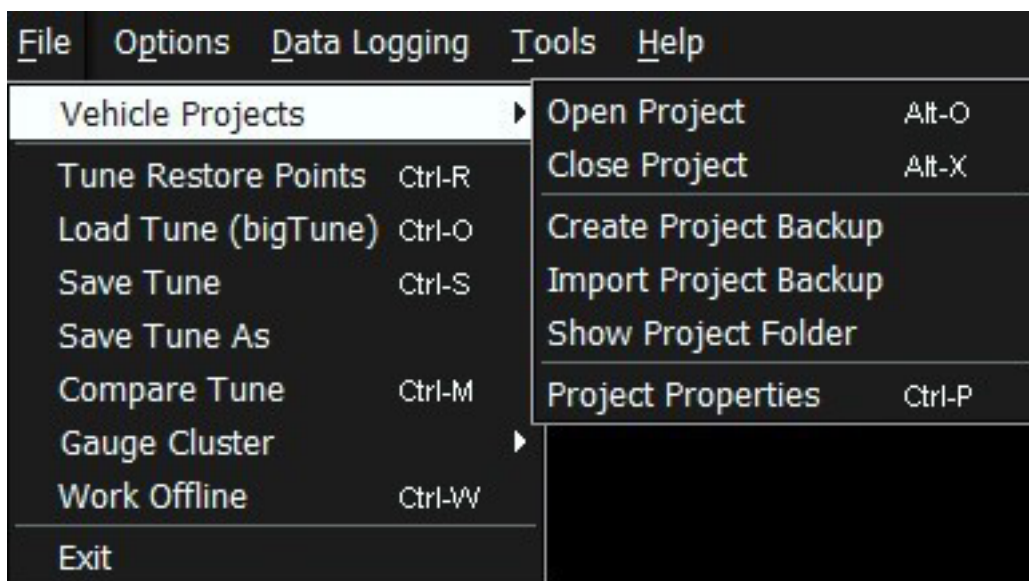
[Back to Table of Contents](#)

There are 5 pulldown menu options included in the **Online File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The first pulldown menu is **File**. Left click on **File** and the following submenu will open.



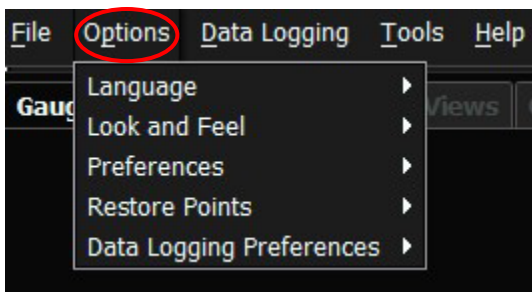
File: Under the **File** dropdown you can; open a Project, Load Tune Restore Points, Load Tunes, Save Tunes, Compare Tunes, modify your Gauge Clusters, choose to Work Offline and Exit from the BigComm Pro software.

- Select **Vehicle Project** to open an existing Project. Do so by selecting **File** → **Vehicle Projects** in the pulldown submenus and select the **Project** you want to open on your computer. Press **Select** to finish and open.



- The **Vehicle Project** dropdown submenu enables you to:
 - **Open Project** or press Alt-O - Will open an Open Project window to allow a new or current project to be opened and selected.
 - **Close Project** or press Alt-X - Will close the current BigComm Pro Project.
 - **Create Backup Project** - Allows a Project Backup to be created. This will be covered in detail in the Special Features section. Click [HERE](#) for more information.
 - **Import Project Backup** - Allows you to import a Project backup file. This will be covered in detail in the Special Features section. Click [HERE](#) for more information.
 - **Show Project Folder** - Opens the current Project folder.
 - **Project Properties** or press Ctrl-P - Will open a Project Properties window to be viewed.

There are 5 pulldown menu options included in the **Online File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The second pulldown menu is **Options**. Left click on **Options** and the following submenu will open.



Options: Under the **Options** dropdown submenu you can; choose your default Language, the Look and Feel of the software, software Preferences, Project Restore Points, and Data Logging Preferences. The **Options** menu is the same whether a Project is open, closed or offline/online with an ECU. Therefore, the **Options** overview on pages 45 thru 48 is the same and will not be repeated here.

There are 5 pulldown menu options included in the **Online File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The third pulldown menu is **Data Logging**. Left click on **Data Logging** and the following submenu will open.



Data Logging: Under the **Data Logging** dropdown submenu you can; Start Logging, take a look at Logging Profiles, configure how Trigger Logging, View the data log data with MegaLogViewer, Show the Datalog Folder. The **Data Logging** pulldown menu has additional features which are the same whether a project is open or closed or offline/online with an ECU. However only certain features can be enabled.

- The **Data Logging** dropdown submenu enables you to:
 - **Start Logging** or press Ctrl-L to start a new datalog to your PC. Even if the vehicle is not running you can start a datalog to record your sensors or anything else you want to log.
 - **Logging Profiles** - *INFO COMING SOON*
 - **Triggered Logging** - Allows the Automatic Logging Trigger to be enabled, Start and Stop logging criteria to be configured and the data log length of time to be set.
 - **View with MegaLogViewer** - MegaLogViewer software or press Alt-V to start.
 - **Show Datalog Folder** - Will open the Datalog Folder on your PC.
 - **Performance and Economy Fields** - *INFO COMING SOON*

How to Start, Stop and Save a Datalog to your PC:

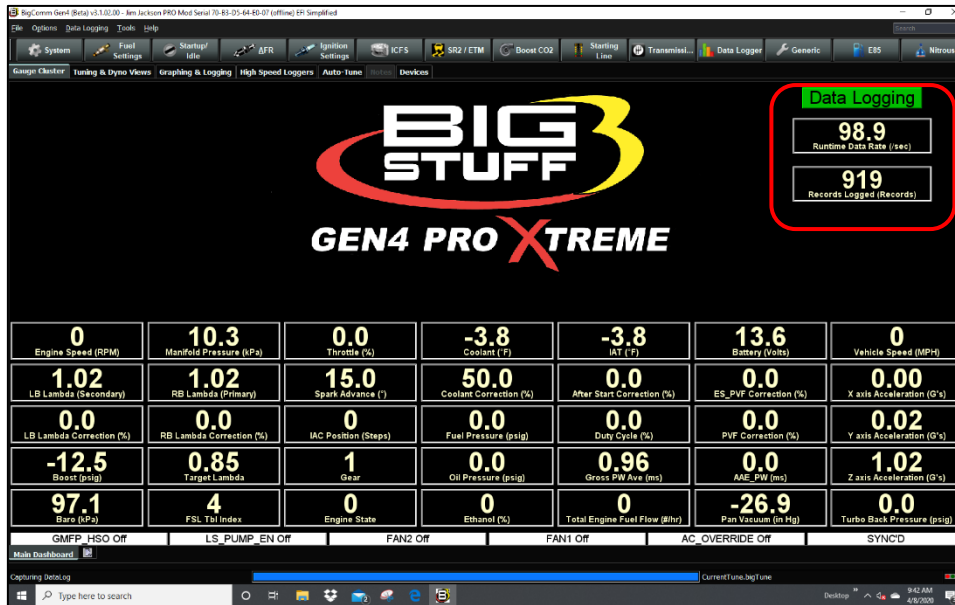
- Select **Start Logging** to start a new a datalog to your PC. Do so by selecting **Data Logging** → **Start Logging** in the pulldown menu or by pressing Ctl-L. Once open, highlight and mouse click on **Start Logging** to start the datalog.

The screenshot shows the software interface for the BIG STUFF GEN4 PRO XTREME. The main window displays a dashboard with the following data:

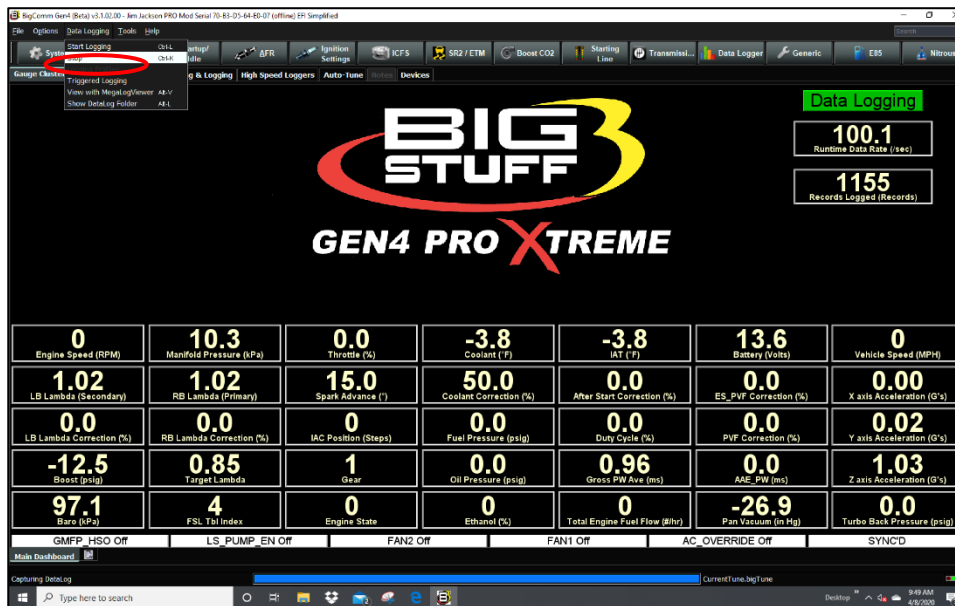
Data Logging						
99.1 Runtime Data Rate (/sec)						0 Records Logged (Records)
0 Engine Speed (RPM)	10.3 Manifold Pressure (kPa)	0.0 Throttle (%)	-3.8 Coolant (F)	-3.8 AT (F)	13.6 Battery (Volts)	0 Vehicle Speed (MPH)
1.02 LB Lambda (Secondary)	1.02 RB Lambda (Primary)	15.0 Spark Advance (°)	50.0 Coolant Correction (%)	0.0 After Start Correction (%)	0.0 ES_PV Correction (%)	0.00 X axis Acceleration (G's)
0.0 LB Lambda Correction (%)	0.0 RB Lambda Correction (%)	0 MC Position (Steps)	0.0 Fuel Pressure (psig)	0.0 Duty Cycle (%)	0.0 P/V Correction (%)	0.02 Y axis Acceleration (G's)
-12.5 Boost (psig)	0.85 Target Lambda	1 Gear	0.0 Oil Pressure (psig)	0.96 Gross PW Ave (ms)	0.0 AAE_PW (ms)	1.02 Z axis Acceleration (G's)
97.1 Baro (kPa)	4 FSL Tbl Index	0 Engine State	0 Ethanol (%)	0 Total Engine Fuel Flow (l/hr)	-26.9 Pan Vacuum (in Hg)	0.0 Turbo Back Pressure (psig)
GMFP_HSO Off	LS_PUMP_EN Off	FAN2 Off	FAN1 Off	AC_OVERRIDE Off	SYNC'D	

The interface also includes a menu bar with options like 'File', 'Options', 'Data Logging', and 'Tools'. A 'Data Logging' dropdown menu is visible, showing options like 'Start Logging', 'View with MegaLogViewer', and 'Show Datalog Folder'. The 'Start Logging' option is highlighted with a red circle.

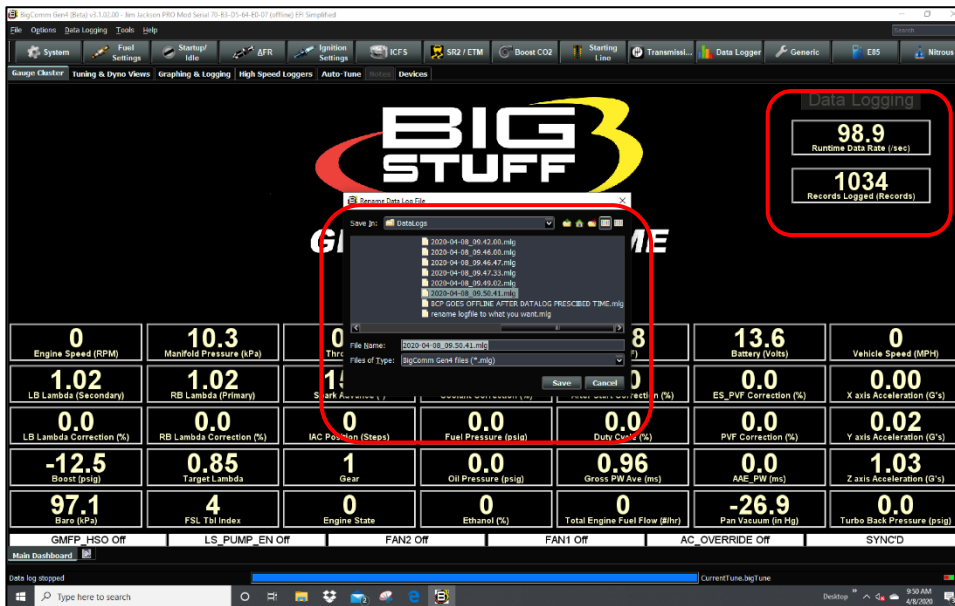
- Once the datalog is started, the **Data Logging** monitor, located in the top right-hand corner of the screen, will turn green to indicate the datalog has started and the **Records Logged** monitor will show the datalog records being logged as shown below.



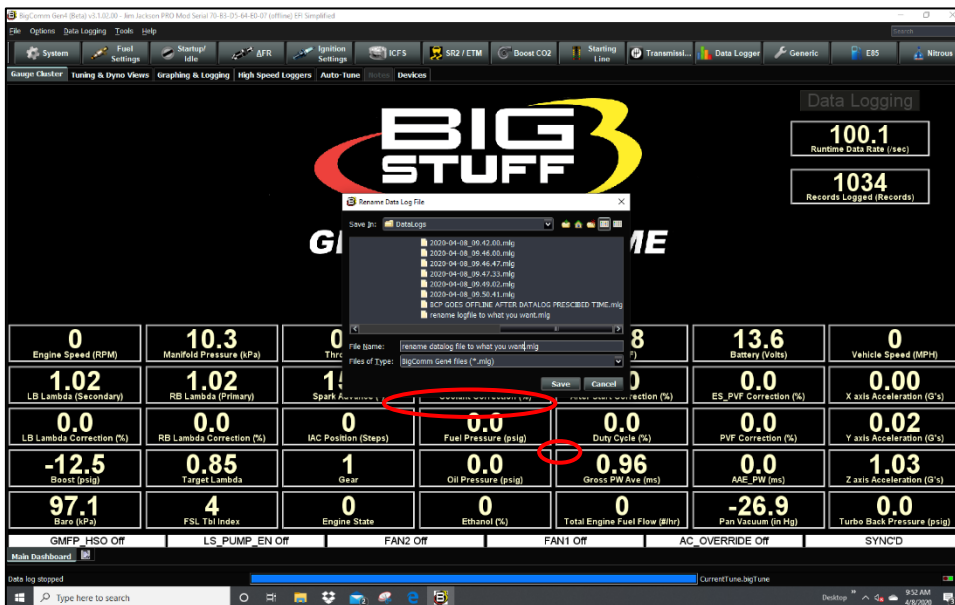
- To stop the datalog, select **Data Logging** → **Stop** in the pulldown menu or by pressing Ctl-K. Once the pulldown menu opens, highlight and mouse click on **Stop** to stop the datalog.



- Once **Stop** is selected, the **Data Logging** monitor will turn off to indicate the datalog has stopped, the **Records Logged** monitor will stop recording the datalog records and a **Rename Data Log File** window will appear to allow the datalog file to be saved as shown below.

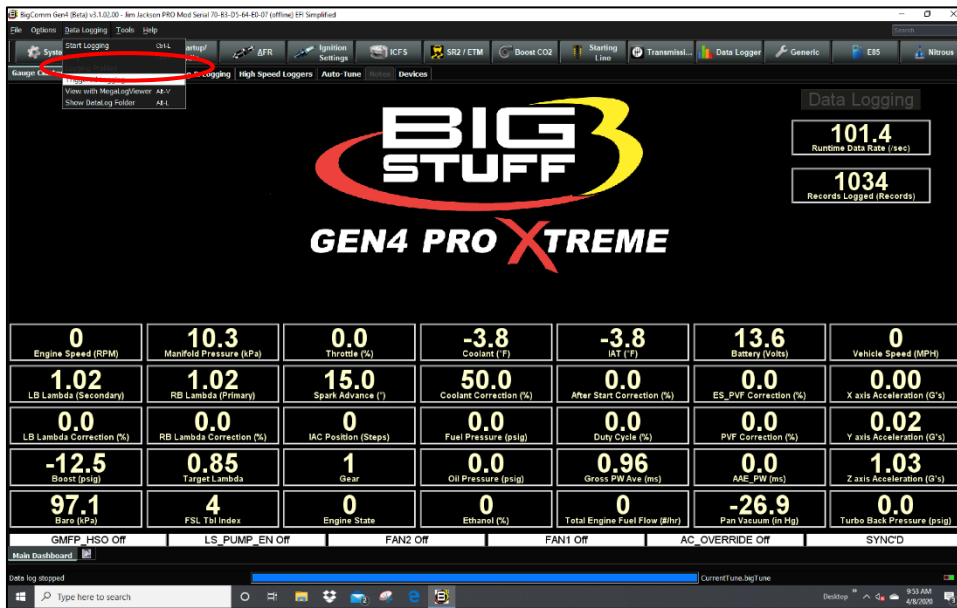


- At this point, you can save the datalog file using the default File Name or rename it by typing in your own datalog file name in place of the default File Name. Once renamed, highlight and click on **Save** to save the datalog file to the PC as shown below.

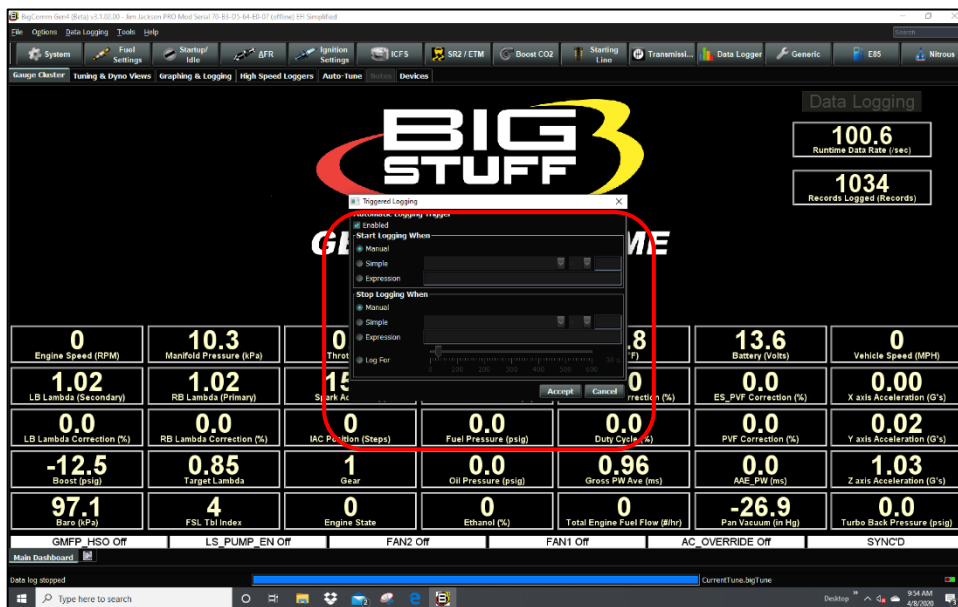


How to configure the Datalog Trigger criteria:

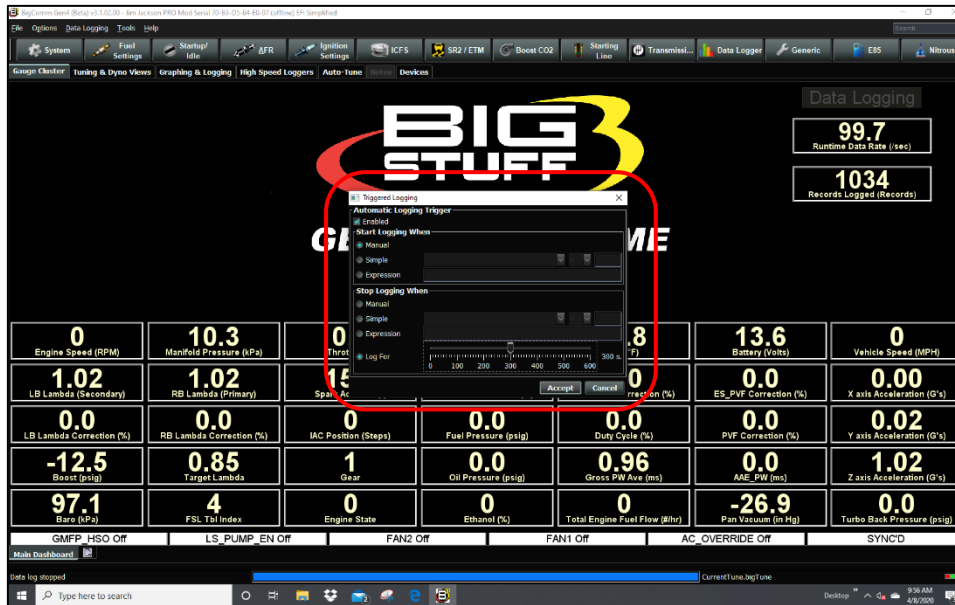
- Select **Triggered Logging** to configure the datalog trigger criteria. Do so by selecting **Data Logging** → **Triggered Logging** in the pulldown menu. Once open, highlight and mouse click on **Triggered Logging** to start the datalog as shown below.



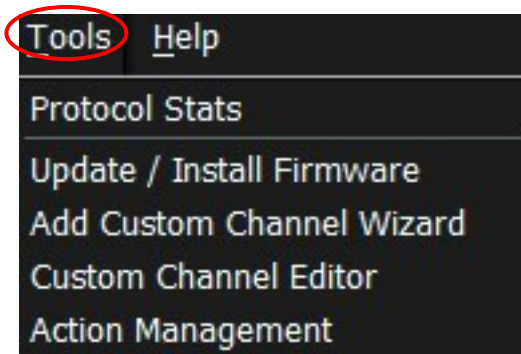
- Once **Triggered Logging** is selected, the Triggered Logging criteria window will open as shown below.



- Once the Triggered Logging criteria window opens, there are numerous ways to configure the datalog trigger criteria. The above screen shot shows the **Automatic Logging Trigger** enabled, with **Manual Start and Stop triggers**. The screen shot below shows the **Automatic Logging Trigger** enabled, with **Manual Start and Log For 300 seconds**.



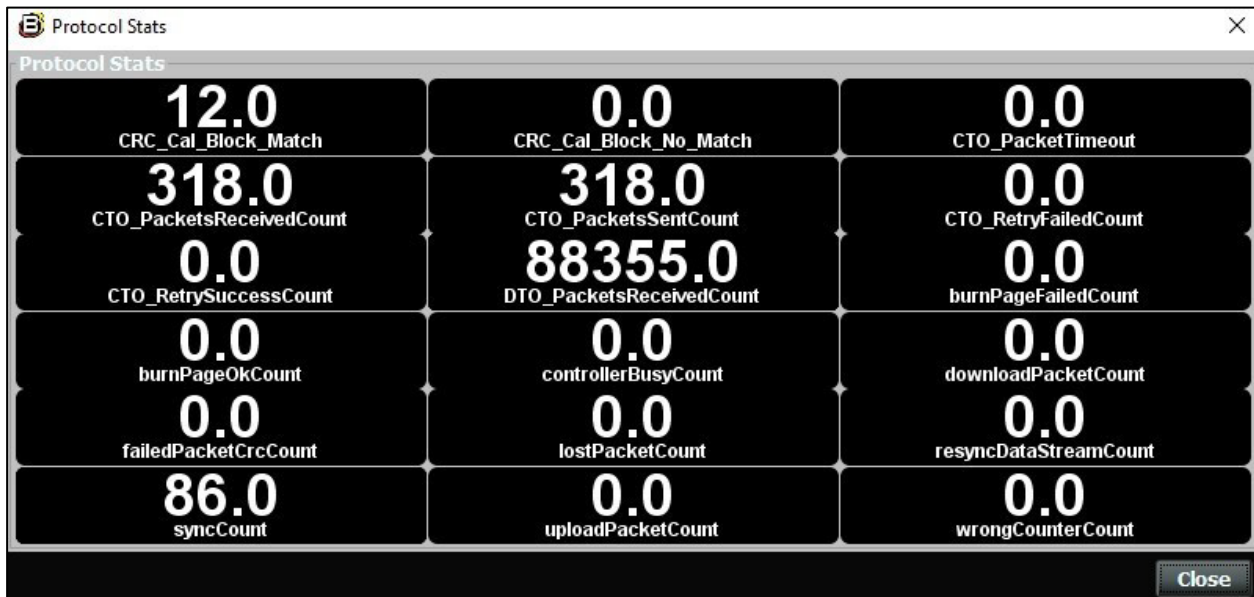
There are 5 pulldown menu options included in the **Online File, Options, Data Logging, Tools & Help Tool Bar**. Each pulldown menu serves a specific purpose. The fourth pulldown menu is **Tools**. Left click on **Tools** and the following submenu will open.



Tools: Under the **Tools** dropdown you can; check Protocol Stats, Update / Install Firmware, add a Custom.Channel Wizard, add a Custom Channel Editor and use Action Management to configure Action Triggers. The **Tools** pulldown menu has additional features in the online mode that are not available in the offline mode.

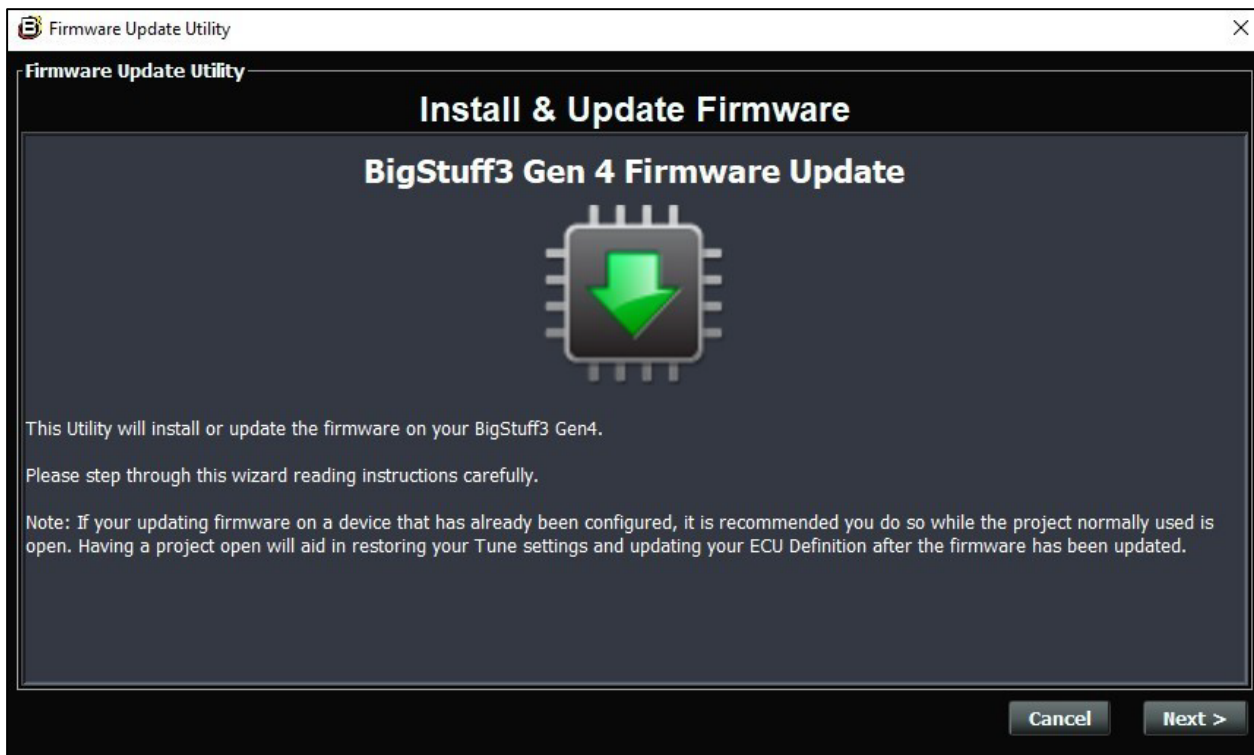
- The **Tools** dropdown submenu enables you to:
 - **Protocol Stats** – Displays GEN4 PRO XTREME ECU online communication statistics.
 - **Update / Install Firmware** – Utility to install or update the GEN4 PRO XTREME firmware.
 - **Add Custom Channel Wizard** – Enables Input channels to be configured.
 - **Custom Channel Editor** – Enables Output channel, Guage templates and Data Log Fields to be configured.
 - **Action Management** – Enables Action Triggers to be configured.

Protocol Stats window



The protocol stats will update and show relevant data when the computer and GEN4 ECU are communicating back and forth.

Update / Install Firmware window



This is scheduled for a future firmware release

Add Custom Channel Wizard window

Simple Advanced

Simple Channel

Input Channel

New Channel Name

Units

Transformation Linear inc File

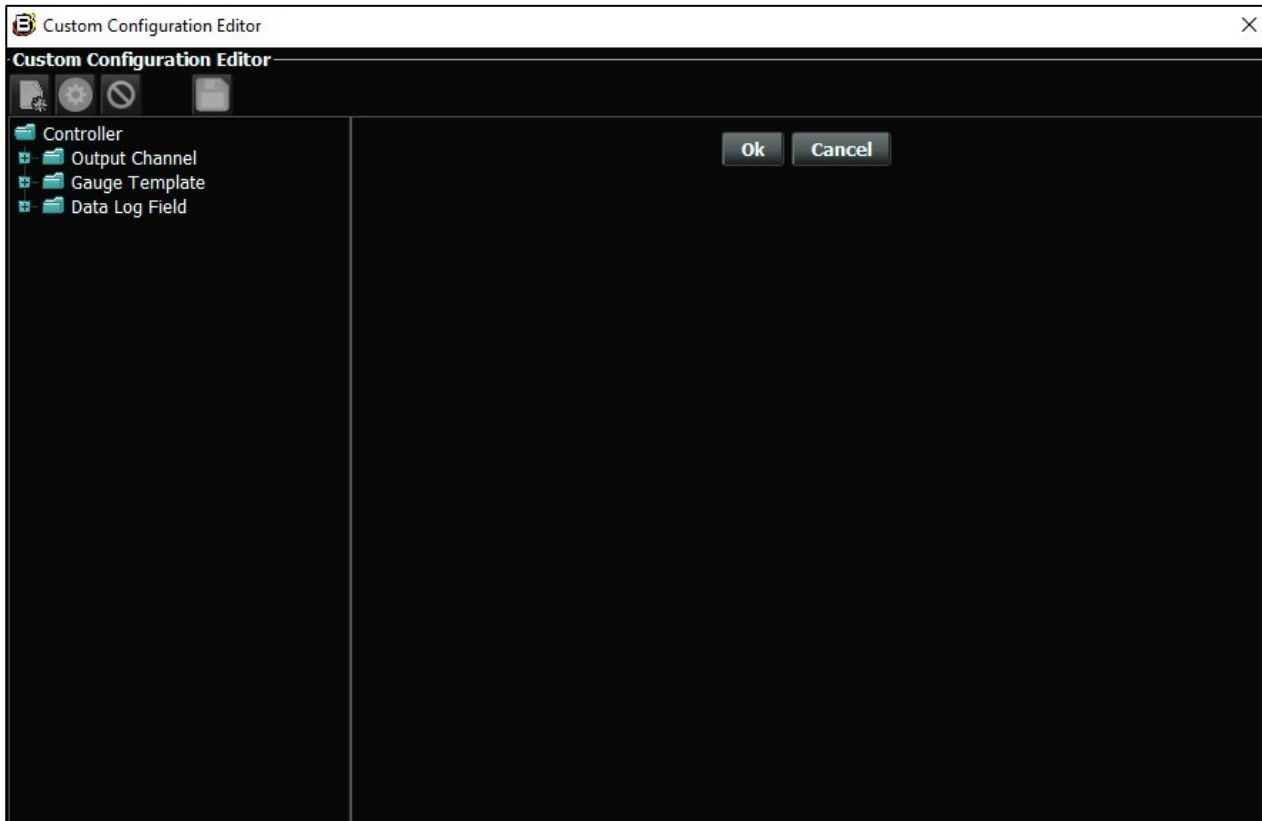
Linear Transformation

Volt to ADC Conversion

	Input Voltage	Output Value
Point 1	<input type="text" value="0.00"/>	<input type="text" value="0.00"/>
Point 2	<input type="text" value="0.00"/>	<input type="text" value="0.00"/>

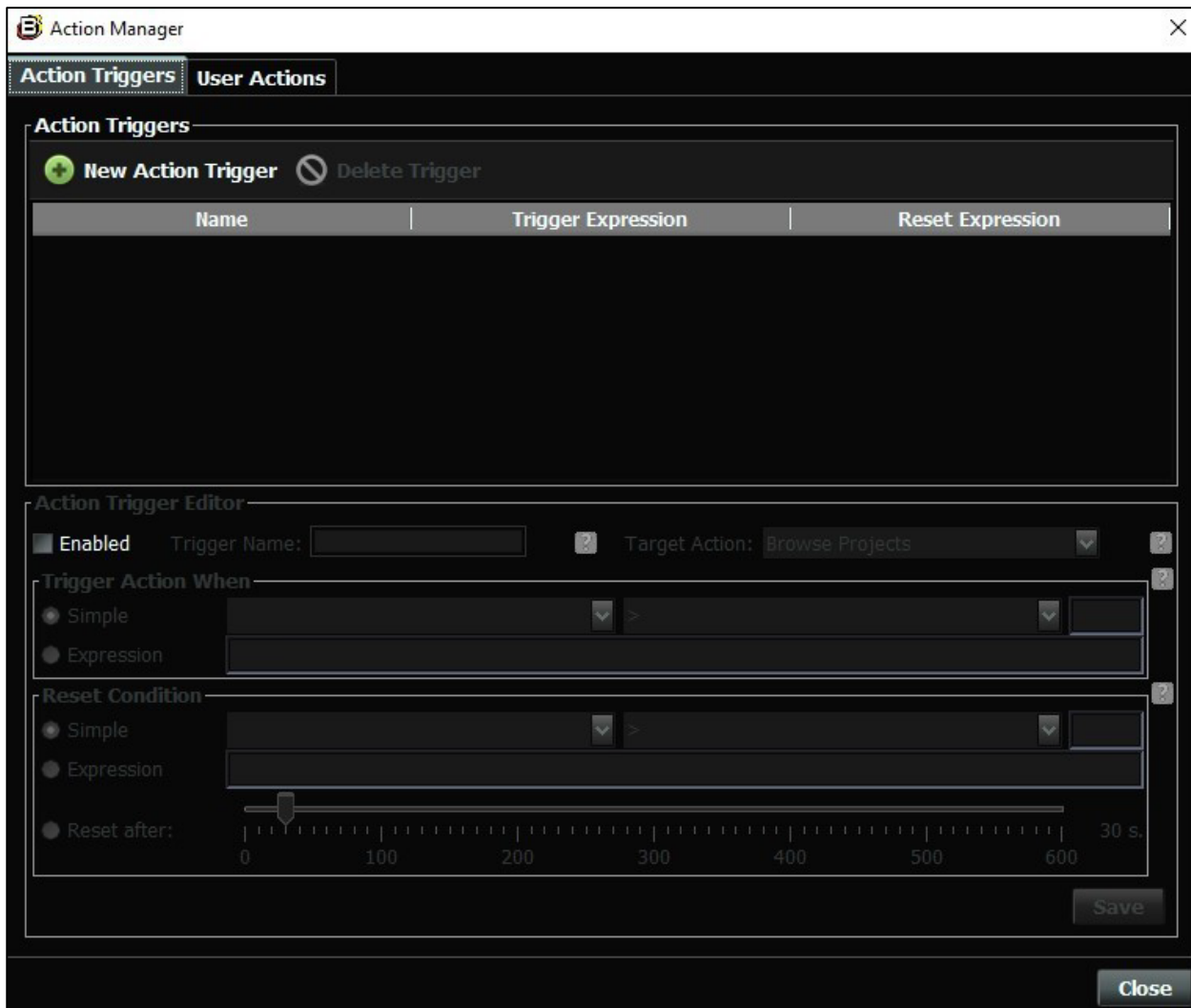
More information coming soon

Custom Channel Editor window



More information coming soon

Action Management window



More information coming soon

10. BIGCOMM PRO CONFIGURATION & CALIBRATION TOOL BAR


[Back to Table of Contents](#)


0 Engine Speed (RPM)	10.3 Manifold Pressure (kPa)	0.0 Throttle (%)	-3.8 Coolant (°F)	-3.8 IAT (°F)	13.6 Battery (Volts)	0 Vehicle Speed (MPH)
1.02 LB Lambda (Secondary)	1.02 RB Lambda (Primary)	15.0 Spark Advance (°)	50.0 Coolant Correction (%)	0.0 After Start Correction (%)	0.0 ES_PVF Correction (%)	0.00 X axis Acceleration (G's)
0.0 LB Lambda Correction (%)	0.0 RB Lambda Correction (%)	0 IAC Position (Steps)	0.0 Fuel Pressure (psig)	0.0 Duty Cycle (%)	0.0 PVF Correction (%)	0.02 Y axis Acceleration (G's)
-12.6 Boost (psig)	0.85 Target Lambda	1 Gear	0.0 Oil Pressure (psig)	0.96 Gross PW Ave (ms)	0.0 AAE_PW (ms)	1.03 Z axis Acceleration (G's)
97.2 Baro (kPa)	4 FSL Tbl Index	0 Engine State	0 Ethanol (%)	0 Total Engine Fuel Flow (#/hr)	-26.9 Pan Vacuum (in Hg)	0.0 Turbo Back Pressure (psig)

The **BigComm Pro Configuration & Calibration Tool Bar** incorporates the menus and submenus to allow you to configure and calibrate each portion of the overall Project, such as System, Fuel, Spark, Air Fuel Ratio, etc. The **BigComm Pro Configuration & Calibration Tool Bar** has been purposely laid out, such that for an initial Project configuration and calibration, you work from left to right to sequence thru each of the individual configuration and calibration menus and submenus i.e. **Systems** first, **Fuel Settings** second, **Start Up / Idle** third, etc. Subsequent to the initial Project configuration and calibration, the **BigComm Pro Configuration & Calibration Tool Bar** menus and submenus can be randomly selected to continue to refine the Project's configurations and calibrations.

Key BigComm Pro ground rules

Before we get into the BigCommPro Configuration and Calibration Tool Bar, there are several key ground rules to remember:

(1) When working inside any of the Configuration and Calibration Tool Bar menus and submenus, the configuration and calibration changes need to be “burned” into the ECU to save the changes when you are done making changes. The **Burn** button  is located in the lower right-hand corner of every table. Clicking on the **Burn** button ensures the changes you make will be permanently saved to the ECU. Every time you **hit the Burn button** the BigComm Pro software will burn the entire project into the ECU. This is so that if there were any areas you forget to hit the burn button the entire project will be sent to the ECU.

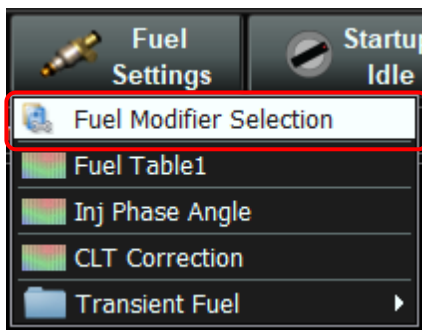
(2) In the System Menu  in order to complete the changes for certain ECU parameter configuration the ignition switch needs to go through an on-off key cycle to the ECU for the changes to take effect. The two **System** submenus requiring this are **Generic Port Editor** and **Hardware Configuration**. Failure to switch the ignition off for up to 30 seconds may prevent the changes from taking effect.

(3) What's displayed in the **Configuration & Calibration Tool Bar** submenus, depends on which options have been enabled.

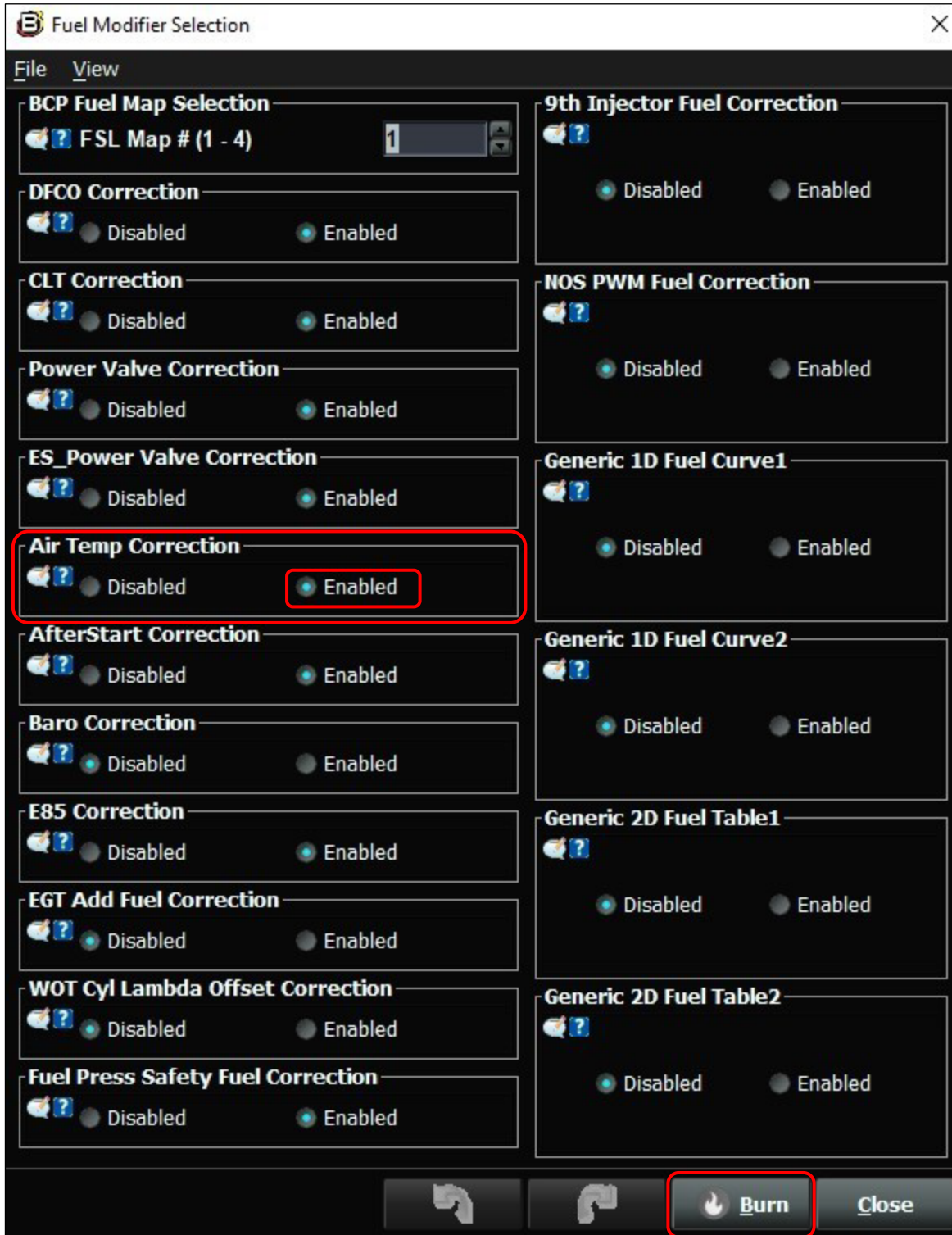
For example, when initially selecting the **Fuel Settings**  menu you may only see the following options listed in the submenu:



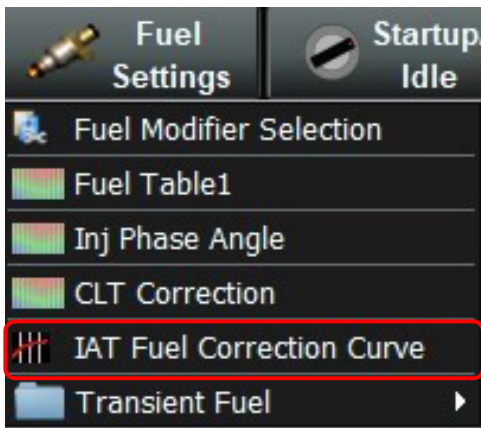
Now let's say you want to enable **Intake Air Temperature Correction** for your combination. In order to do so, you need to go to the **Fuel Settings** menu and highlight and select **Fuel Modifier Selection** using the left mouse key as shown below.



Once **Fuel Modifier Selection** is selected, the **Fuel Modifier Selection** configuration window will open as shown below. Once opened, the **Air Temp Correction** needs to be enabled by selecting the **Enabled** button in the **Air Temperature Correction** dialogue window and then clicking on the **Burn** button.



The **Air Temperature Correction** will now be displayed as a submenu in the new **Fuel Settings** menu as shown below.



The procedure detailed above is how to add any available modifier table submenu into the **BigComm Pro Configuration and Calibration Tool Bar** menus.

How to edit changes in BigCommPro:

BigComm Pro has several types of editor windows, represented by Curves, Tables & Parameters. The BigComm Pro software represents each of these editing windows with the following icons:

Curve Window Icon:

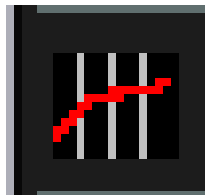
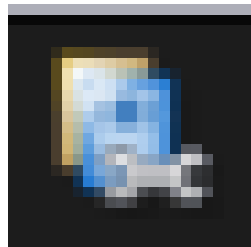
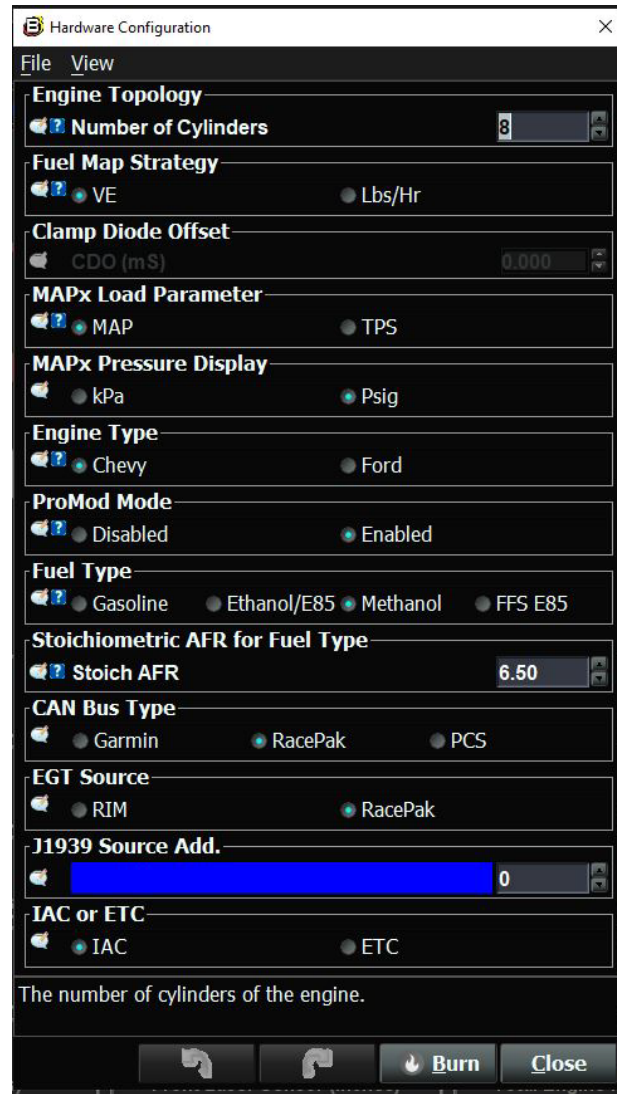


Table Window Icon:



Parameter Window Icon:



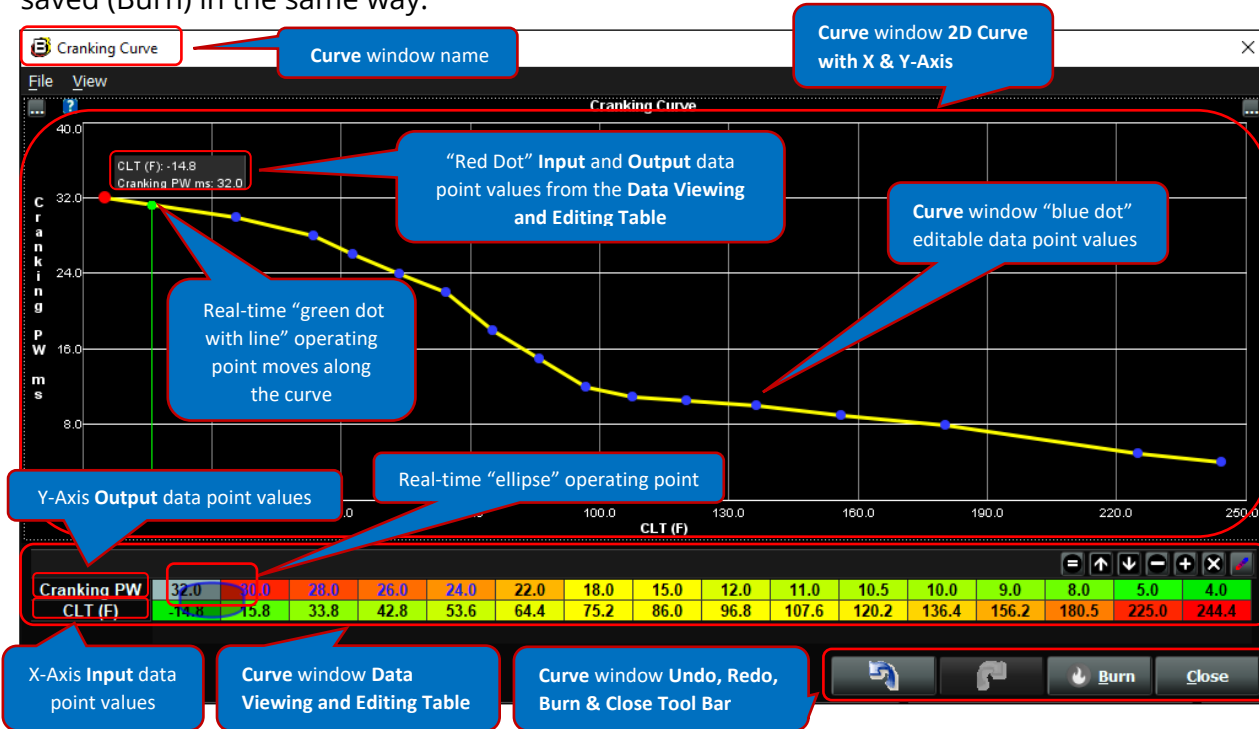
Parameter Window:

As you can see, Curve, Table and Parameter windows have a different look and feel so, it's important to understand how to navigate, configure, edit and save (Burn) the data changes for each of them.

11. HOW TO NAVIGATE & CONFIGURE CURVE WINDOWS

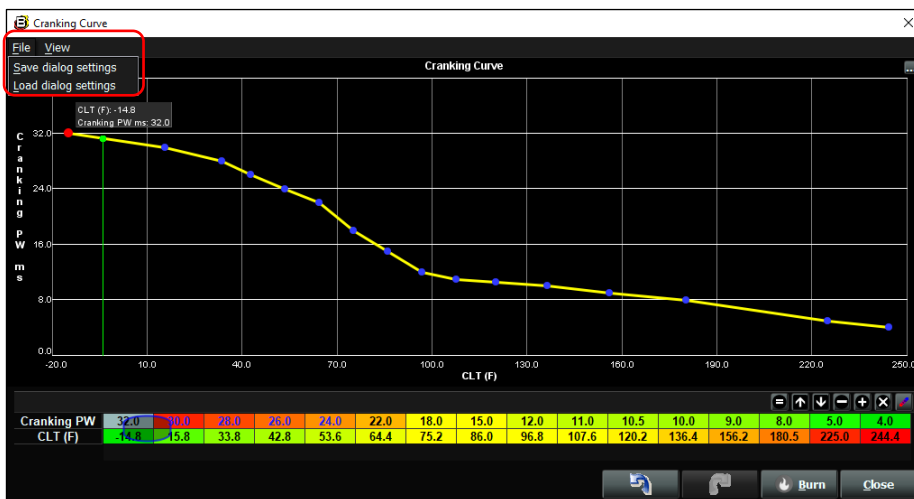
[Back to Table of Contents](#)

A **Curve** window can be easily identified by having a yellow curved line with blue dots associated with each editable data point. A Curve is typical referred to a 2D Curve made up of a vertical Y-Axis on the left and a horizontal X-Axis on the bottom. A **Cranking Curve** as shown below will be used this example. All BigComm Pro **Curve** windows can be navigated, configured, edited and saved (Burn) in the same way.



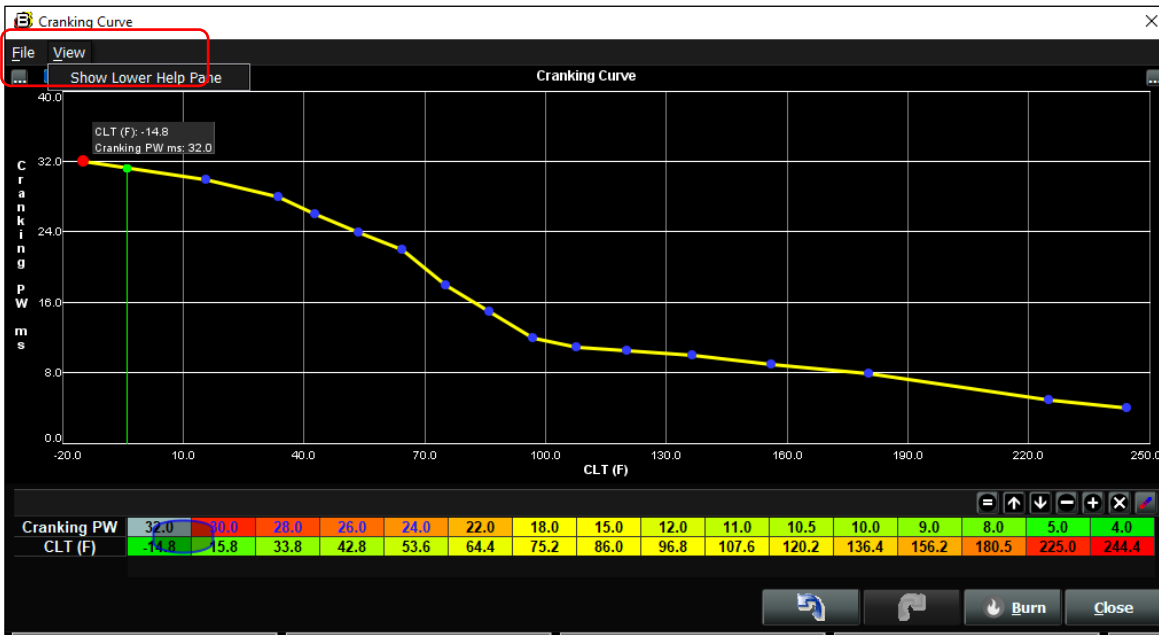
Let’s take a closer look at how to navigate & configure **Curve** windows changes by understanding the features of the **Curve** window GUI. The balance of the **Curve** window GUI features are detailed below.

File: By selecting the **File** pulldown menu, using the left mouse key, you can **Save** or **Load** individual **Curves** as shown below. This can be done offline or online when working in a Project.

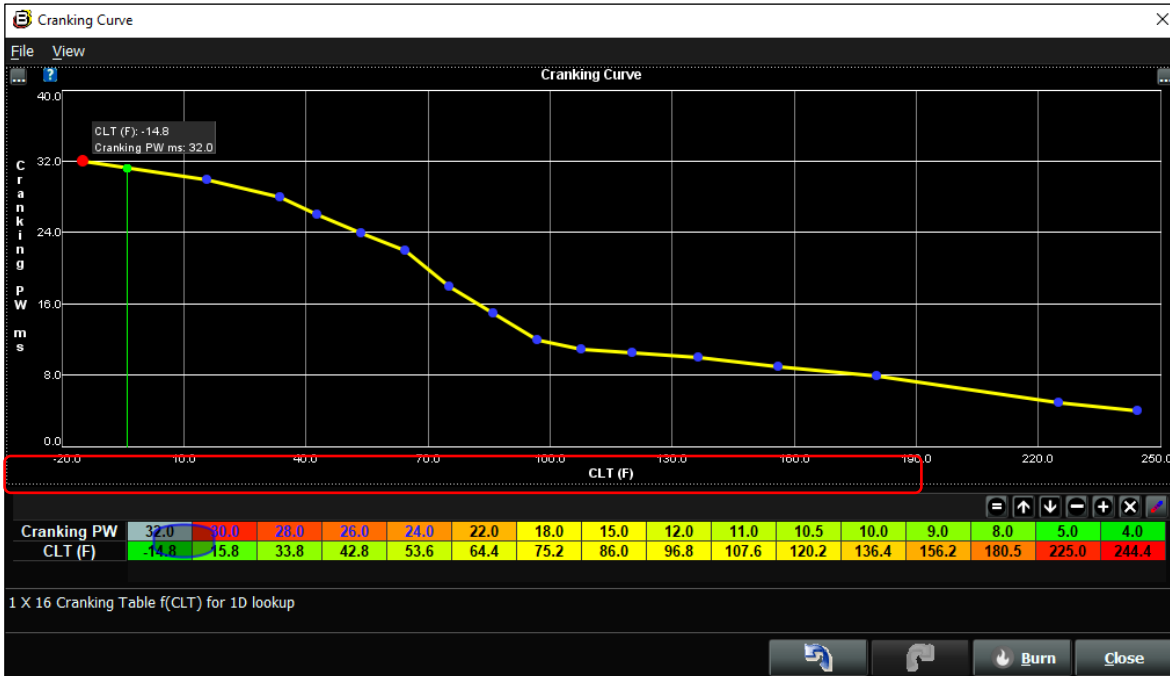


View: By selecting the **View** pulldown menu you can enable and disable the Lower Help Pane which will be displayed below the lower data viewing & editing table as shown below. This can be done offline or online when working in a Project.

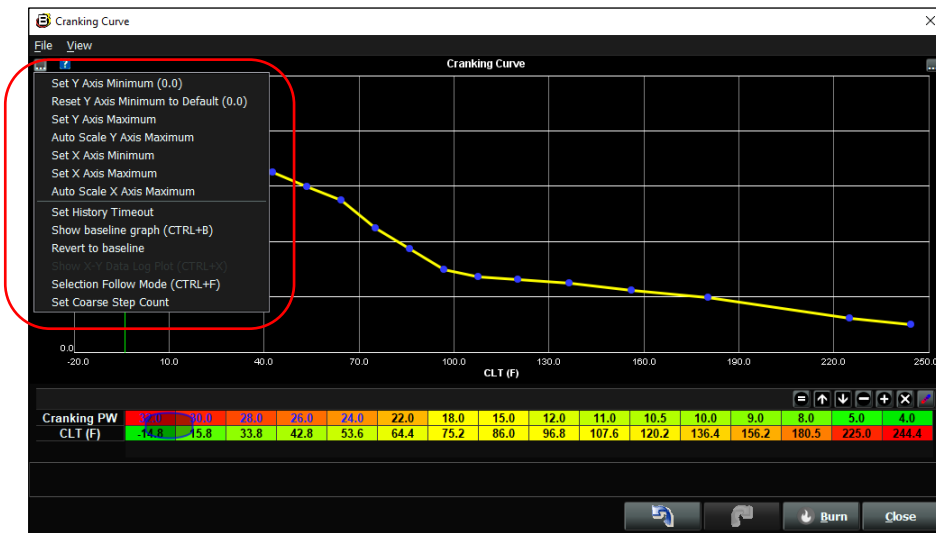
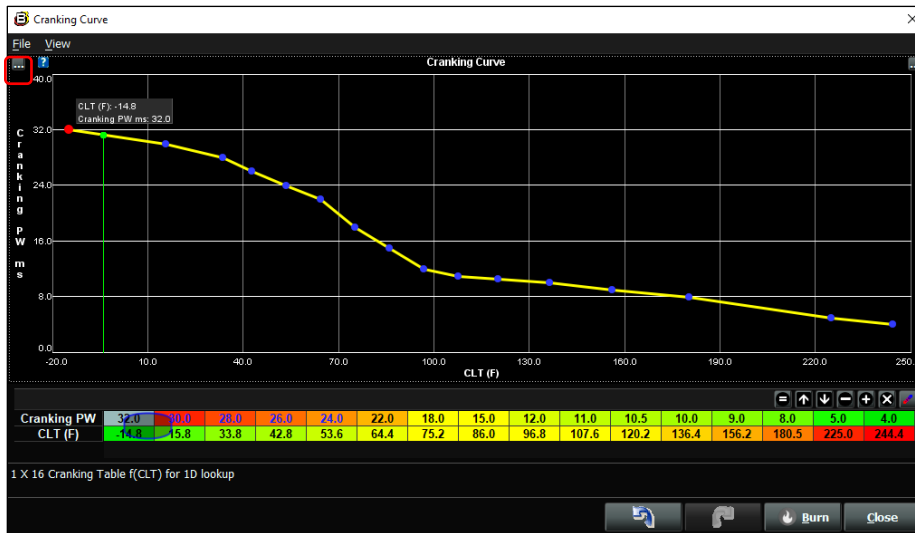
Cranking Curve window with Lower Help Pane disabled



Cranking Curve window with Lower Help Pane enabled

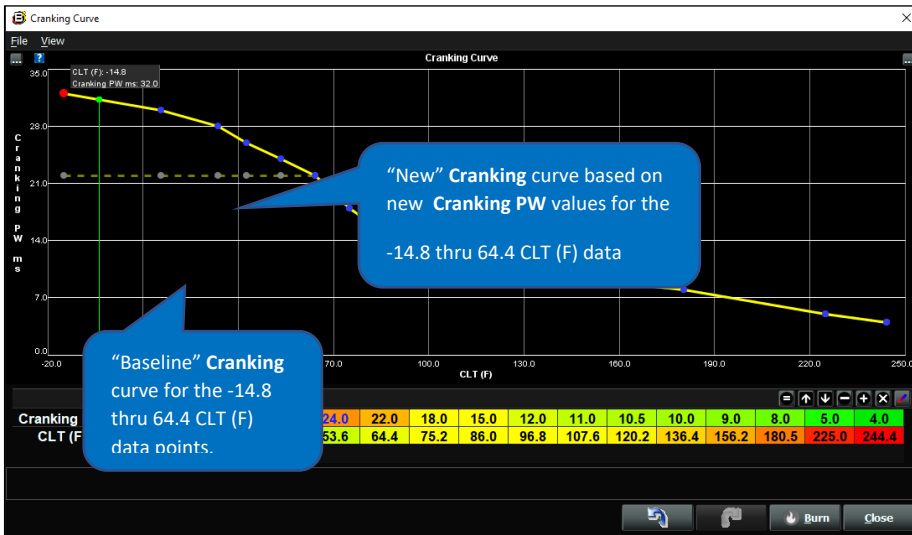


By selecting the “3 dot” icon located in the upper left-hand corner of the **Curve** window you can manually reset the X-Axis & Y-Axis minimum and maximum values or the X-Axis Maximum and Y-Axis Maximum with Auto Scale. You can also; Set History Timeout, Show baseline graph, Revert to baseline, Selection Follow Mode and Set Coarse Step Count. This can be done offline or online when working in a Project. Additional detail is below.

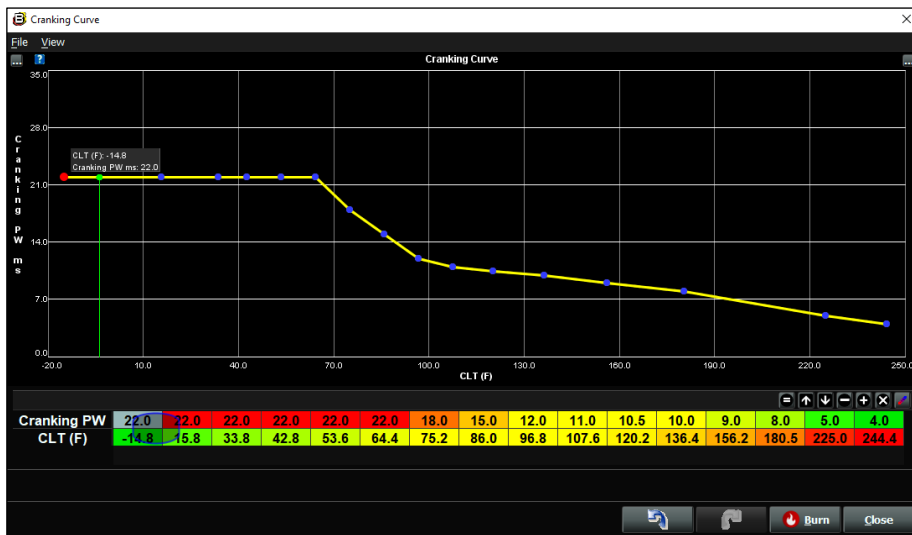


- Set Y Axis Minimum (0.0)** - Select to reset Y-Axis Minimum to desired value
- Reset Y Axis Minimum to Default (0.0)** - Select to reset Y-Axis Minimum to 0.0
- Set Y-Axis Maximum** - Select to maximize the 2D **Curve** window fit for the Y-Axis
- Auto Scale Y Axis Maximum** - BigCommPro will auto scale the Y-Axis values entered in the Y-Axis based on the values entered
- Set X-Axis Minimum** - Select to reset X-Axis Minimum to desired value
- Set X-Axis Maximum** - Select to maximize the 2D **Curve** window fit for the X-Axis
- Auto Scale X Axis Maximum** - BigCommPro will auto scale the values entered in the X-Axis based on the values entered
- Set History Timeout** - *INFO COMING SOON*

Show baseline graph (CTRL+B) – Select to view the “baseline” curve to show the initial curve data point values. Once selected, a shaded yellow dashed line with gray data point values will appear in the 2D graph window to show the baseline data point values prior to the “new” data point value changes you made as shown below.



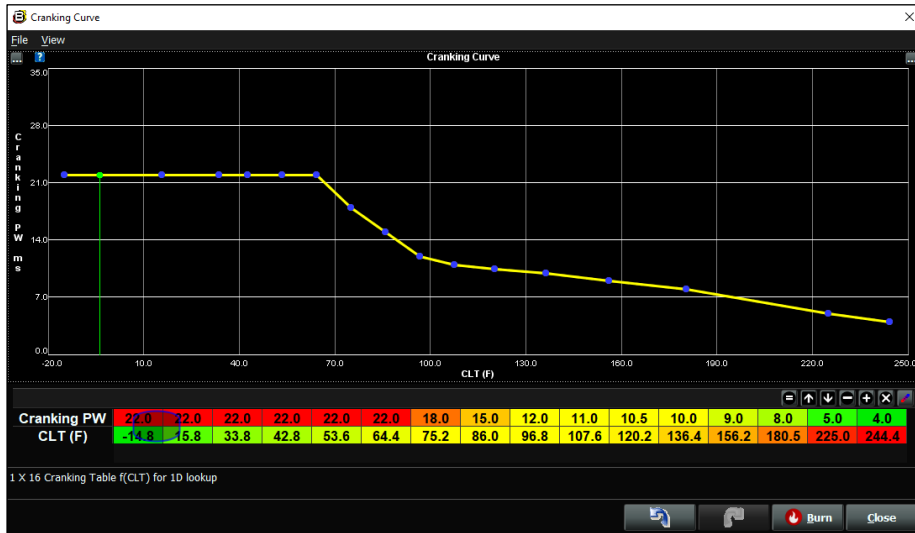
Revert to baseline – Select to revert the “New” curve to the “Baseline” curve. Once selected, the “New” curve will be replaced with the “Baseline” curve as shown below.



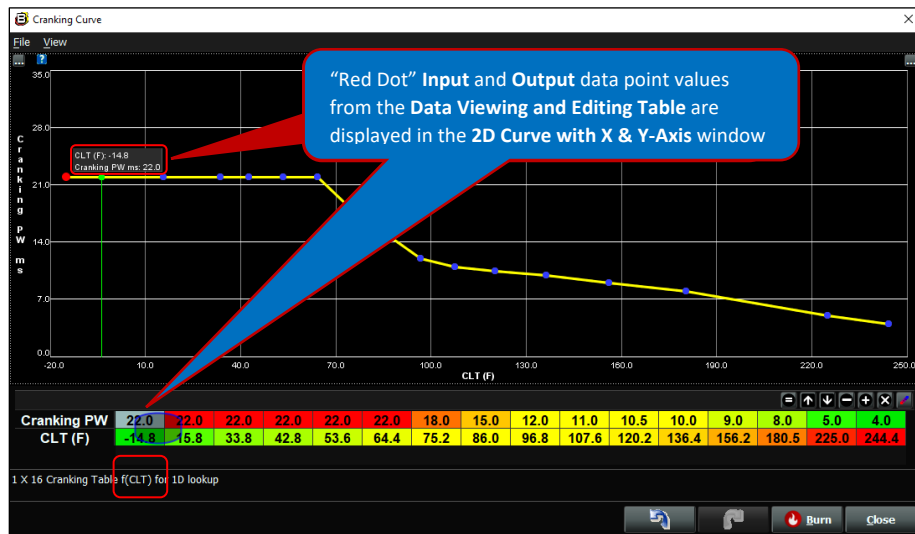
THIS AREA LEFT BLANK INTENTIONALLY

Selection Follow Mode (CTRL+F) – Select to display the “Red Dot” **Input** and **Output** data point values from the **Curve window Data Viewing and Editing Table** in the **Curve window 2D Curve with X & Y-Axis**.

Curve window with Selection Follow Mode disabled



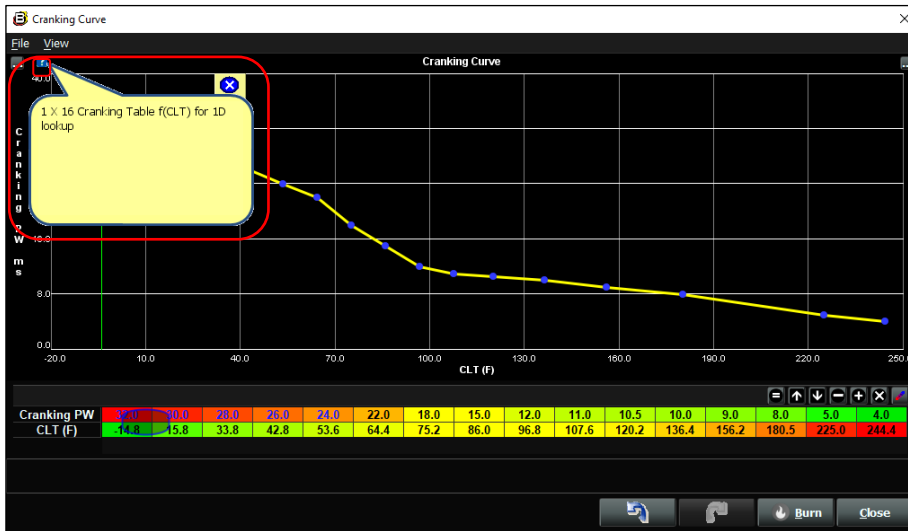
Curve window with Selection Follow Mode enabled



Set Coarse Step Count - INFO COMING SOON

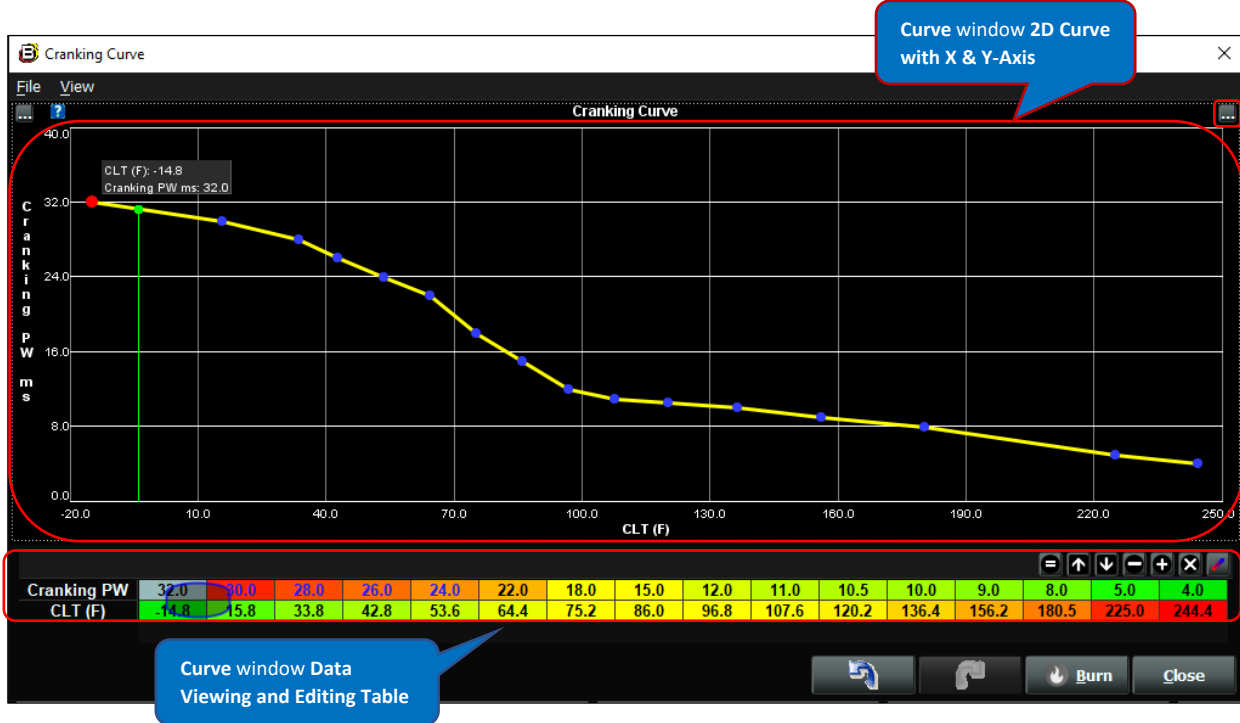


By selecting the “Blue box with white Question Mark” icon, located in the upper left-hand corner of the **Curve** window, a yellow dialogue box will open to show specific details about the particular Curve window being edited as shown below. Once opened, you can click on the **Blue X** to close the yellow dialogue box.

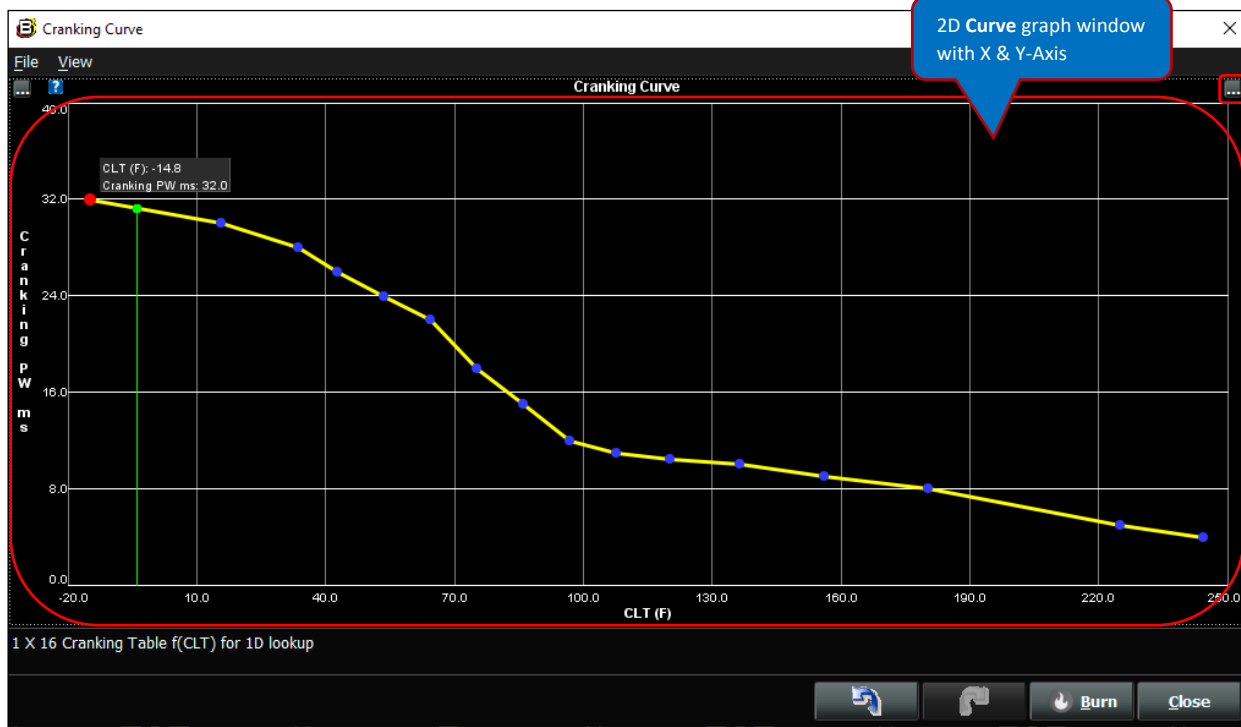


By selecting the “3 dot” icon, located in the upper right-hand corner of the **Curve** window, you can switch between the **Curve window 2D Curve with X & Y Axis** and the **Curve window Data Viewing and Editing Table** or just displaying the **Curve window 2D Curve with X & Y-Axis** as shown below.

Curve window displaying both the 2D Curve with X & Y Axis and the Data Viewing and



Curve window displaying only the 2D Curve graph window with X & Y Axis

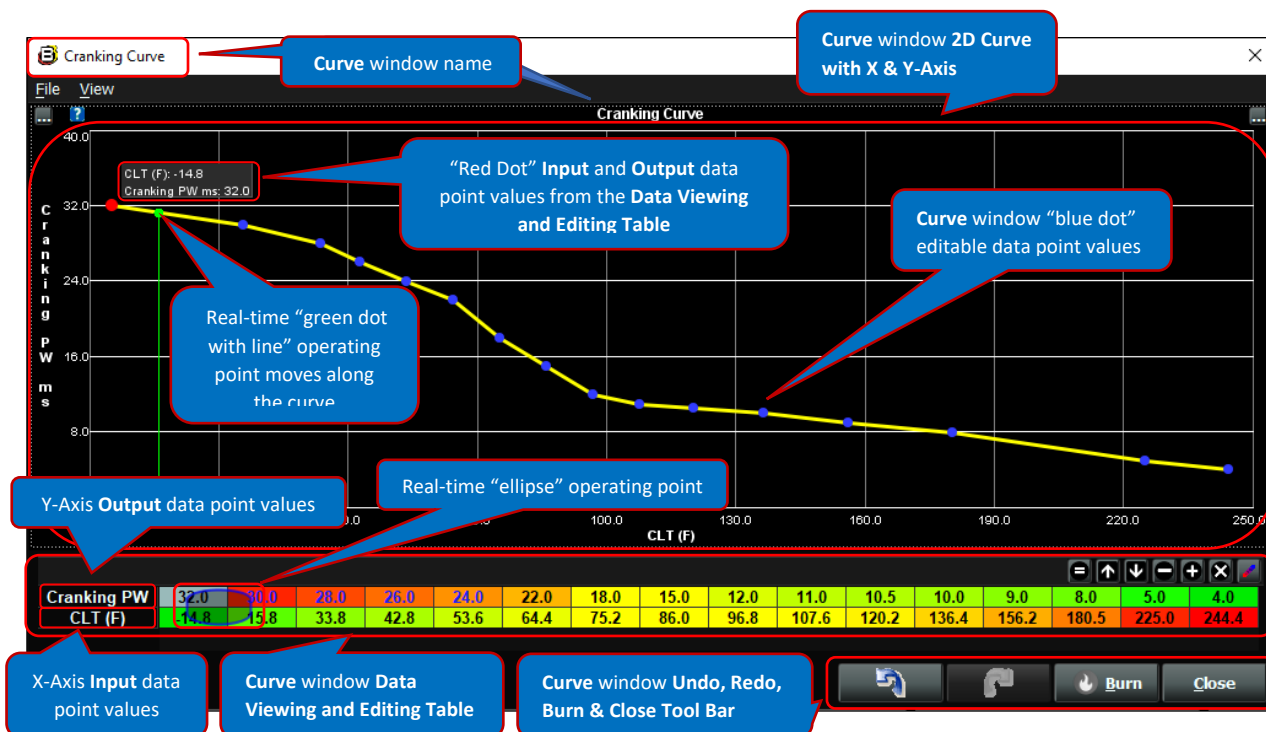


12. HOW TO EDIT AND SAVE CURVE WINDOWS



[Back to Table of Contents](#)

We will now focus on how to Edit and Save (Burn) **Curve** windows data point values.

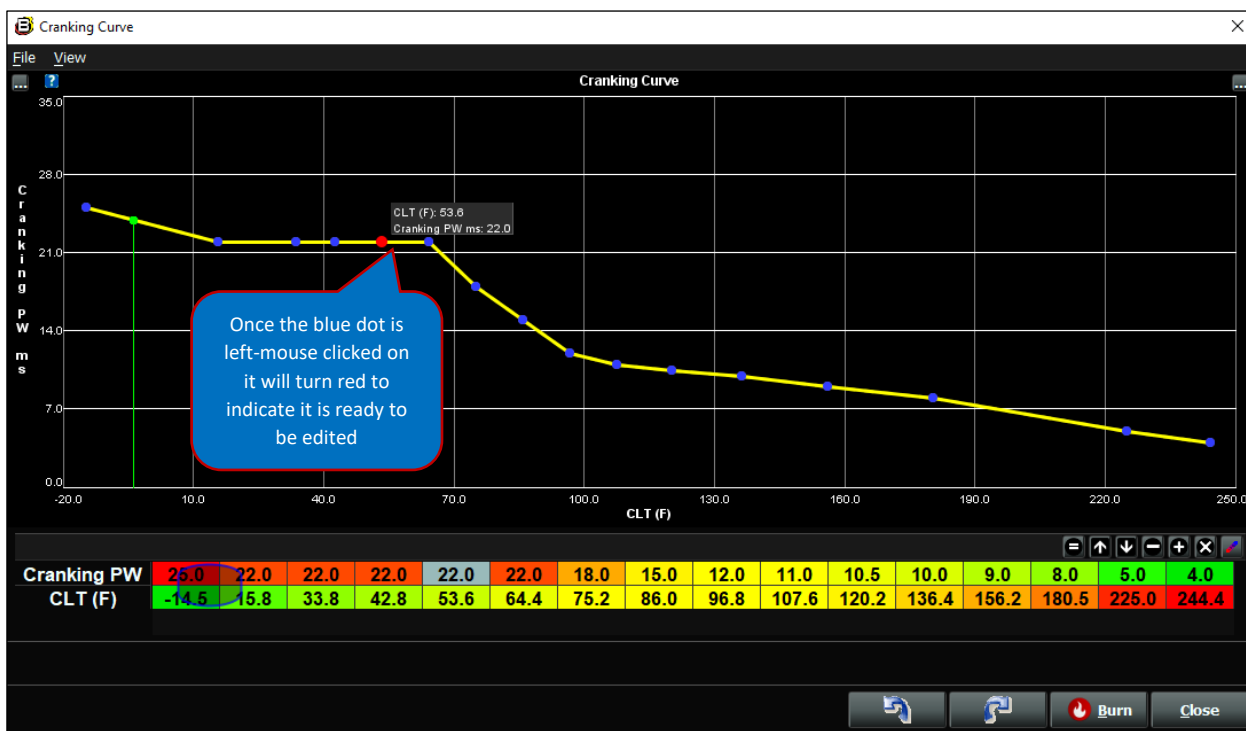


There are two ways to edit the **Curve** window data point values. The first is to directly edit the “blue dot” data point values along the yellow 2D curve. The second is to edit the data point values using the Curve window Data and Editing table. Each of these methodologies are explained below.

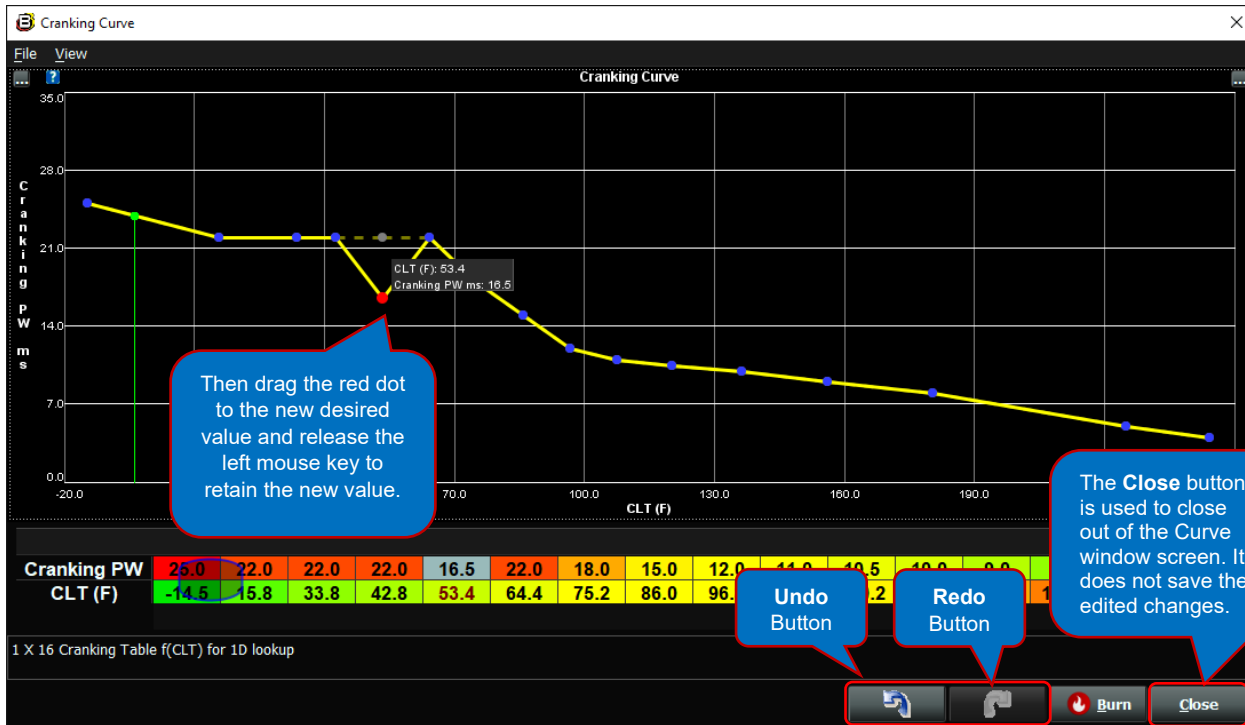
Directly editing the “blue dot” data values along the yellow 2D curve using the mouse to “drag and drop”

You can directly edit the “blue dot” data point values along the yellow 2D curve, by left mouse clicking on any of the “blue dot” data point values along the 2D curve. Once the left mouse key is clicked on the “blue dot”, it will turn red to indicate it is ready to be edited. Holding down on the left mouse key, “drag and drop” the red dot, up or down to a new desired value. Once you drag the red dot to the new desired value, release the left mouse key to retain the new value. Then left mouse click again, off the red dot, to turn it blue to reflect the new “blue dot” data point value along the 2D curve. See below.

Note: You may want to enable **Show baseline graph** so you can see how your changes compare to the baseline curve.



Note: The **Undo** or **Redo** buttons, located in the lower right-hand corner of the screen, are used to undo or redo the last changes made to the Curve window data point values along the 2D curve.



Note: The **Close** button, located in the lower right-hand corner of the screen, is used to close out the Curve window screen. **The Curve window edited changes are not saved when the Close button is selected. Edited changes are only permanently saved when the Burn button is selected!**

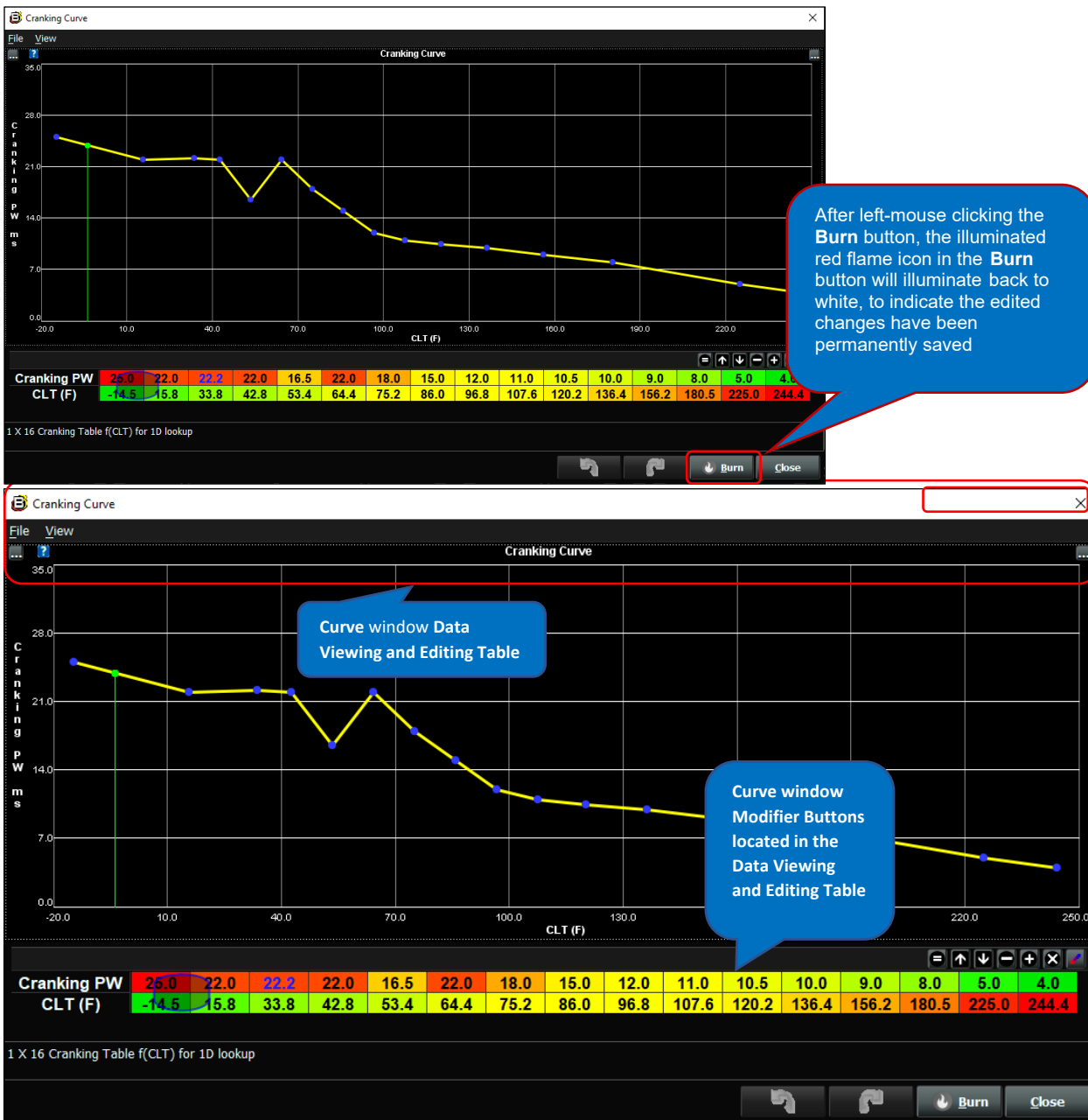


There are a couple of very important things to note at this point;

The first is, as soon as you highlight any Curve window data point value along the 2D curve or in the Data Viewing and Editing Table, you will see the flame icon in the **Burn** button,

located in the lower right-hand corner of the screen, will illuminate red, as shown above, to indicate the BigComm Pro software is anticipating a change to take place. **You must left-mouse click on the illuminated red flame Burn button after making any changes to Curve window data point values in order to permanently save the edited changes. If the illuminated red flamed Burn button is not left-mouse clicked on, the edited changes will not be saved!**

The second is, **after left-mouse clicking on the Burn button, the illuminated red flame icon in the Burn button will illuminate back to white, to indicate the edited changes have been permanently saved** as shown below.



There are numerous other ways to edit the “blue dot” data point values along the yellow 2D curve other than using the mouse to “drag and drop”. They are explained below.

Editing the Curve window data point values using the Modifier Buttons







The “blue dot” data points along the yellow 2D curve can also be edited using the **Modifier Buttons** located in the **Curve** window **Data Viewing and Editing Table** highlighted above. The data points can be edited individually, grouped or all together by depressing and holding down on the left-mouse key and highlighting one box or row of boxes you want to edit. Once highlighted, the editing table boxes will turn a gray/blue and the blue dots along the 2D curve will turn red, to indicate the data point values are ready to be edited using the **Modifier Buttons**. You can then select the Modifier Buttons to add, subtract, increase, etc the data point values. How to edit the 2D curve data point values using each of the Modifier Buttons is explained below.

Note: **Curve** window **Data Viewing and Editing Table** data point values can be “copy” & “paste” into other **Curve** window **Data Viewing and Editing Tables** using CTRL-C to copy and CTRL-V to paste.

Equal “Set To” Modifier Button

Equal “Set To” is the first Modifier Button. It is used to set the highlighted data point value(s) in the table to the same value(s) / number(s). For example, if you want to set (5) data point values to same number, you use the **Equal “Set To” Modifier Button**. You do so by highlighting the (5) boxes in the table and then select the **Equal “Set To” Modifier Button** using the left-mouse Button. Once selected, a dialogue window will open to ask you to **Set Selected Cells to:** At this point, type in the number you want for all (5) data point values and select **OK**. Once **OK** is selected, the (5) new “equal” data point data point values will appear in the **Curve** window **Data Viewing and Editing Table** and along the yellow 2D curve.




Don’t forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don’t forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close button is selected. The Close  button is only used to “close” out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

Note: If at any point you close out of the **Curve** window, the Back-Arrow **Undo** or Forward-Arrow **Redo** buttons will go grey indicating you cannot go back or forward. This is because the BigComm Pro software only keeps track of the edited changes while the **Curve** window screen is open.

Up Arrow “Increment” Modifier Button

Up Arrow “Increment” is the second Modifier Button. It is used to increase the highlighted data point value(s) by 0.1 increments, which is the default incremental step change. For example, if you want to increase (5) data point values by the same increment, you use the **Up Arrow “Increment” Modifier Button**. You do so by highlighting the (5) boxes in the table and then select the **Up Arrow “Increment” Modifier Button** using the left-mouse key. Once selected, continue to left-mouse click on the **Up Arrow “Increment” Modifier Button**. Every time the left-mouse is clicked, the values will increase by 0.1. As you are left-mouse clicking, the (5) “0.1 incremented” data point data point values will appear in the **Curve window Data Viewing and Editing Table** and along the yellow 2D curve. Continue to click the left-mouse button until reaching the new desired values.

Note: 0.1 increment is the default increment step change. You can change the incremental step change amount, by first highlighting a single or multiple data point value(s) in the **Curve window Data Viewing and Editing Table** by depressing the left-mouse key. Once highlighted, click the right-mouse key to open a dialogue window and select **Set increment amount** using the right or left-mouse key. Once selected, another dialogue window will open asking for the **Preferred Cell Increment Size**. At this point, type in the desired increment step change and left-mouse click on **OK**. This will be the new default increment step change.





Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow  **Redo** button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the  **Burn** button, using the left-mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close button is selected. The Close button is only used to “close” out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

Down Arrow “Decrement” Modifier Button

Down Arrow “Decrement” is the third Modifier Button. It is used to decrease the highlighted data point value(s) by 0.1 increments. For example, if you want to decrease (5) data point values by the same decrement, you to use the **Down Arrow “Decrement” Modifier Button**. You do so by highlighting the (5) boxes in the table and then select the **Down Arrow “Decrement” Modifier Button** using the left-mouse key. Once selected, continue to left-mouse click on the **Down Arrow “Decrement” Modifier Button**. Every time the left-mouse is clicked, the values will decrease by 0.1. As you are left-mouse clicking, the (5) “0.1 decremented” data point data point values will appear in the **Curve window Data Viewing and Editing Table** and along the yellow 2D curve. Continue to click the left-mouse button until reaching the new desired values.





Note: 0.1 decrement is the default decrement step change. You can change the decremental step change amount, by first highlighting a single or multiple data point value(s) in the **Curve** window **Data Viewing and Editing Table** by depressing the left-mouse key. Once highlighted, click the right-mouse key to open a dialogue window and select **Set increment amount** using the right or left-mouse key. Once selected, another dialogue window will open asking for the

Preferred Cell Increment Size. At this point, type in the desired decrement step change and left-mouse click on **OK**. This will be the new default decrement step change.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left-mouse key, when you are done editing the Curve window data point values to permanently save the changes **The Curve window edited changes are not saved when the Close button is selected. The Close  button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**





Minus "Decrease By" Modifier Button

Minus "Decrease By" is the fourth Modifier Button. It is used to decrease the highlighted data point value(s) in the table by the same amount. For example, if you want to decrease (5) data point values by the same amount, you use the **Minus "Decrease By" Modifier Button**. You do so by highlighting the (5) boxes in the table and then select the **Minus "Decrease By" Modifier Button** using the left mouse key. Once selected, a dialogue window will open to ask you to **Decrease Selected Cells by:** At this point, type in the number you want all (5) data point values to be decreased by and select **OK**. Once **OK** is selected, the (5) new "decreased" data point data point values will appear in the **Curve** window **Data Viewing and Editing Table** and along the yellow 2D curve.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left-mouse key, when you are done editing the Curve window data point values to permanently save the changes **The Curve window edited changes are not saved when the Close button is selected. The Close  button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

Plus "Increase By" Modifier Button





Plus "Increase By" is the fifth Modifier Button. It is used to increase the highlighted data point value(s) in the table by the same amount. For example, if you want to increase (5) data point values by the same amount, you use the **Plus "Increase By" Modifier Button**. You would do so by highlighting the (5) boxes in the table and then select the **Plus "Increase By" Modifier Button** using the left-mouse key. Once selected, a dialogue window will open to ask you to **Increase Selected Cells by:** At this point, type in the number you want all (5) data point values to be increased by and select **OK**. Once **OK** is selected, the (5) new "increased" data point data point values will appear in the **Curve** window **Data Viewing and Editing Table** and along the yellow 2D curve.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left-mouse key, when you are done editing the Curve window data point values to permanently save the changes **The Curve window edited changes are not saved when the Close button is selected. The Close  button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**



Multiply "Scale By" Modifier Button

Multiply "Scale By" is the sixth Modifier Button. It is used to increase or decrease the highlighted data point value(s) in the table by the same percentage. For example, if you want to increase or decrease the (5) data point values by the same percentage, you use the **Multiply "Scale By" Modifier Button**. You do so by highlighting the (5) boxes in the table and then select the **Multiply "Scale By" Modifier Button** using the left-mouse key. Once selected, a dialogue window will open to ask you to **Multiply Selected Cells by: ex. 1.2 = raise by 20%**. At this point, type in the number (i.e. percentage) you want all (5) data point values to be increased or decreased by as a percentage and select **OK**. For example, if you want to increase all (5) data point values by 10%, you would enter 1.1. If you want to decrease all (5) data point values by 10%, you would enter .9. Once **OK** is selected, the (5) new "percent increased, or percent decreased" data point data point values will appear in the **Curve** window **Data Viewing and Editing Table** and along the yellow 2D curve.





Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left-mouse key, when you are done editing the Curve window data point values to permanently save the changes **The Curve window edited changes are not saved when the Close button is selected. The Close  button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**



Interpolate Modifier Button

Interpolate is the seventh Modifier Button. It is used to interpolate the data point value(s) in the table relative to the furthest to the left and right highlighted data point values. The **Interpolate Modifier Button** is an effective way to quickly change the profile of **Curve** window's 2D curve. For example, if you want to interpolate between the (5) highlighted data point values, you use the **Interpolate Modifier Button**. You do so by first highlighting the (5) boxes in the table and then select the **Interpolate Modifier Button** using the left mouse key. Once the Interpolate button is selected, the data point values in the (3) highlighted boxes, will be interpolated evenly

between the first and fifth boxes data point values and the (3) new “interpolated” data point data point values will appear in the **Curve** window **Data Viewing and Editing Table** and along the yellow 2D curve.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left-mouse key, when you are done editing the Curve window data point values to permanently save the changes **The Curve window edited changes are not saved when the Close button is selected. The Close  button is only used to “close” out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

13. HOW TO NAVIGATE & CONFIGURE TABLE WINDOWS

[Back to Table of Contents](#)

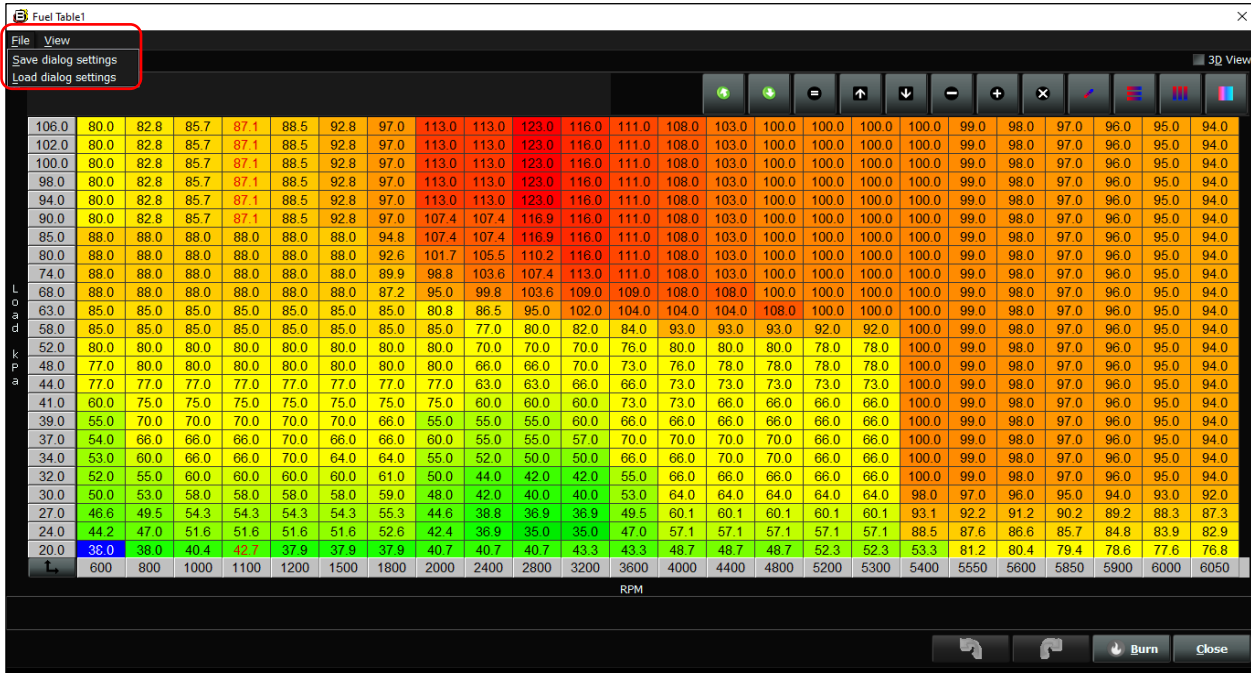


A **Table** window can be easily be identified by 8 x 16, 16 x 16, and 24 x 24 cells of numbers or “Maps” with the vertical Y-Axis on the left and a horizontal X-Axis on the bottom. In most cases, the primary **Tables**, i.e. **Fuel, Spark Advance and Target LAMBDA**, vertical Y-Axis are represented by the Engine **Load** (Engine Manifold Pressure in KPa or Psig) or TPS (Throttle Position Sensor) Throttle position opening as a percentage and the horizontal X-Axis is represented by Engine Speed (RPM). A **Fuel Table**, as shown below will be used for this example. All BigComm Pro **Table** windows can be navigated, configured, edited and saved (Burn) in the same way.



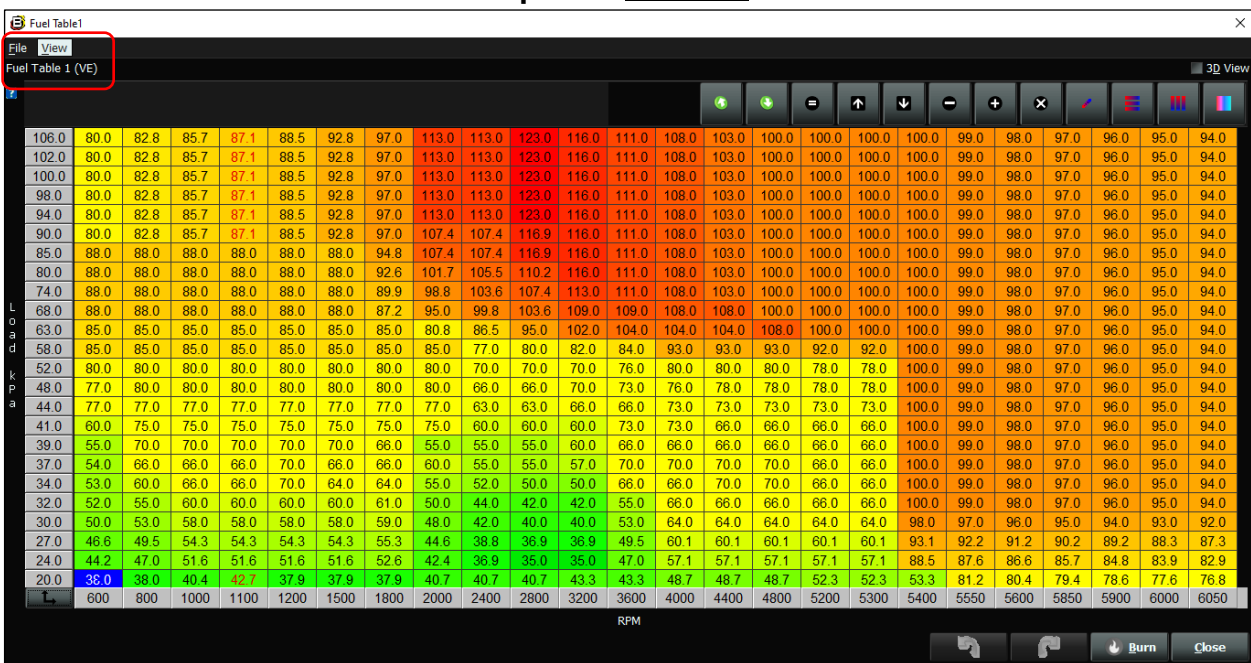
Let's take a closer look at how to navigate & configure **Table** windows changes by understanding the features of the **Table** window GUI. The balance of the **Table** window GUI features are detailed below.

File: By selecting the **File** pulldown menu, using the left mouse key, you can **Save** or **Load** individual Tables as shown below. This can be done offline or online when working in a Project.



View: By selecting the **View** pulldown menu you can enable and disable the **Lower Help Pane** which will be displayed below the Y-Axis of the Fuel Table Map as shown below. This can be done offline or online when working in a Project.

Fuel Table1 window with Lower Help Pane disabled



Fuel Table1 Table with Lower Help Pane enabled

The screenshot shows the 'Fuel Table1' application window. The main area is a large table with RPM values from 600 to 6050 on the x-axis and various engine parameters on the y-axis. A red box highlights the bottom of the table, and a blue box with a white question mark icon is in the top-left corner.

By selecting the **“Blue box with white Question Mark”** icon, located in the upper left-hand corner of the **Table** window, a yellow dialogue box will open to show specific details about the particular **Table** window being edited as shown below. Once opened, you can click on the **Blue X** to close the yellow dialogue box.

The screenshot shows the 'Fuel Table1' application window with a yellow help dialog box open. The dialog box contains the text: "Fuel Table1, volumetric efficiency or pounds/hr fuel." The dialog box has a blue 'X' icon in the top-left corner.

By selecting the **Table** window **Toggle Re-bin X & Y** button, located in the lower left-hand corner of the **Table** window, you can rescale the X & Y-Axis values (see below). It is recommended to save the current table in the event you make a mistake. Also, there are no back or forward arrows in this process, which is why it’s recommended to save the table ahead of time.

Table window showing the Toggle Re-bin X & Y button

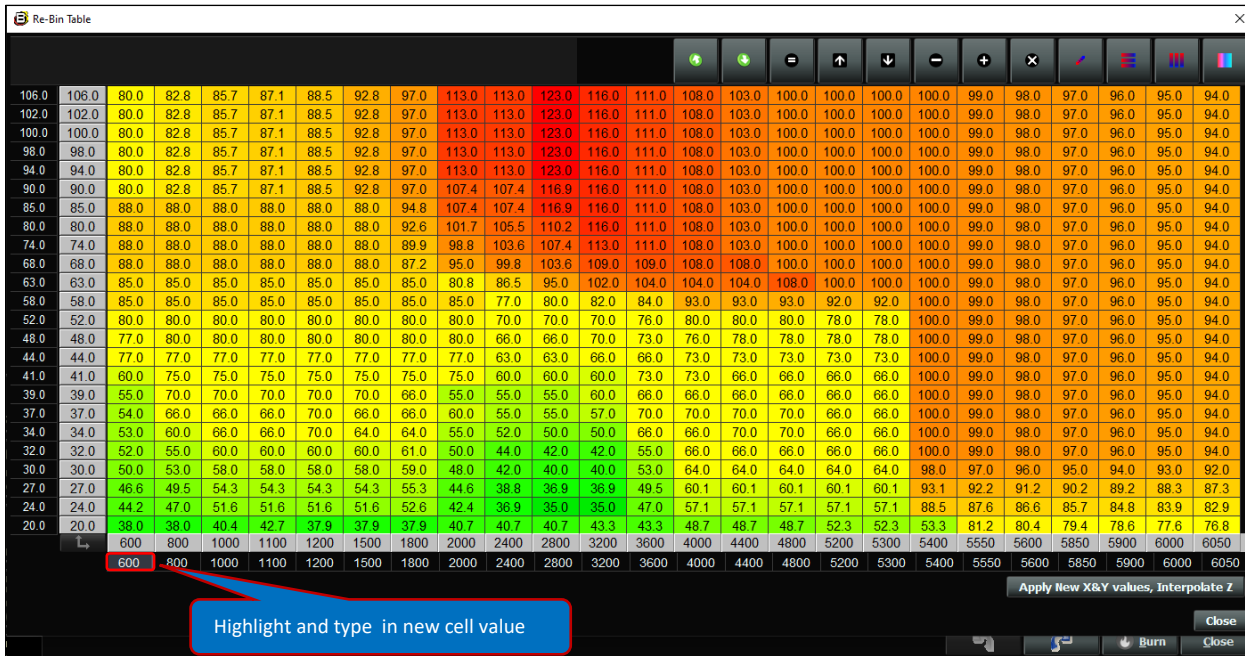
The screenshot shows the 'Fuel Table 1' window. At the bottom left, a button labeled 'Toggle Re-bin X & Y' is highlighted with a red box. A callout bubble points to this button with the text: "The Table window Toggle Re-bin button is used to rescale the X & Y-Axis." The table itself displays various numerical values across multiple rows and columns, with a 'RPM' header at the bottom.

Once the **Table** window **Toggle Re-bin X & Y** button is selected, using the left-mouse key, the following Table window will open displaying secondary X & Y-Axis, with black background and white numbers. These are the axis values you can adjust manually or by interpolating to rescale the X & Y-Axis values.

The screenshot shows the 'Re-Bin Table' window. At the bottom of the table, a row of values representing the secondary X & Y-Axis is highlighted with a red box. A callout bubble points to these values with the text: "The Table window Secondary X & Y-Axis." The table contains numerical data for various RPM values, with a 'Close' button at the bottom right.

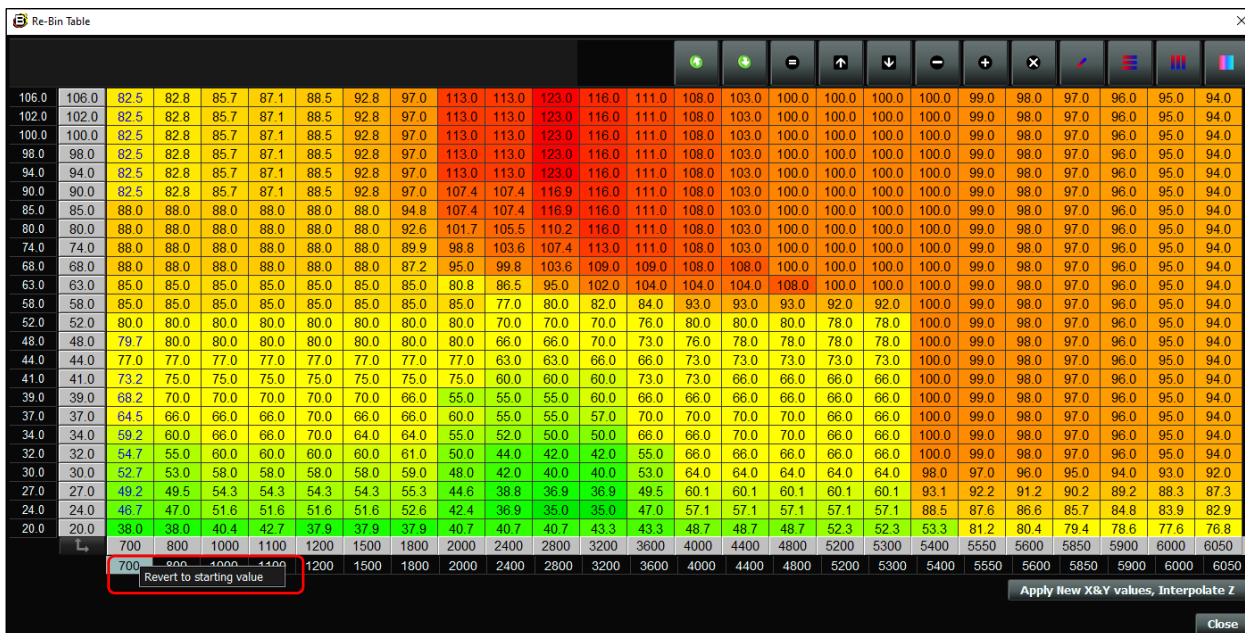
Once the Table window, displaying the secondary X & Y-Axis, is opened you can adjust the individual X and Y-Axis values manually by typing in new values or by interpolating between the X and Y-Axis values you want to change.

To manually adjust the X & Y-Axis values, select the individual value(s), by left mouse clicking on the X & Y-Axis value(s). Once selected, the X & Y-Axis value(s), will turn to a light gray background as shown below.

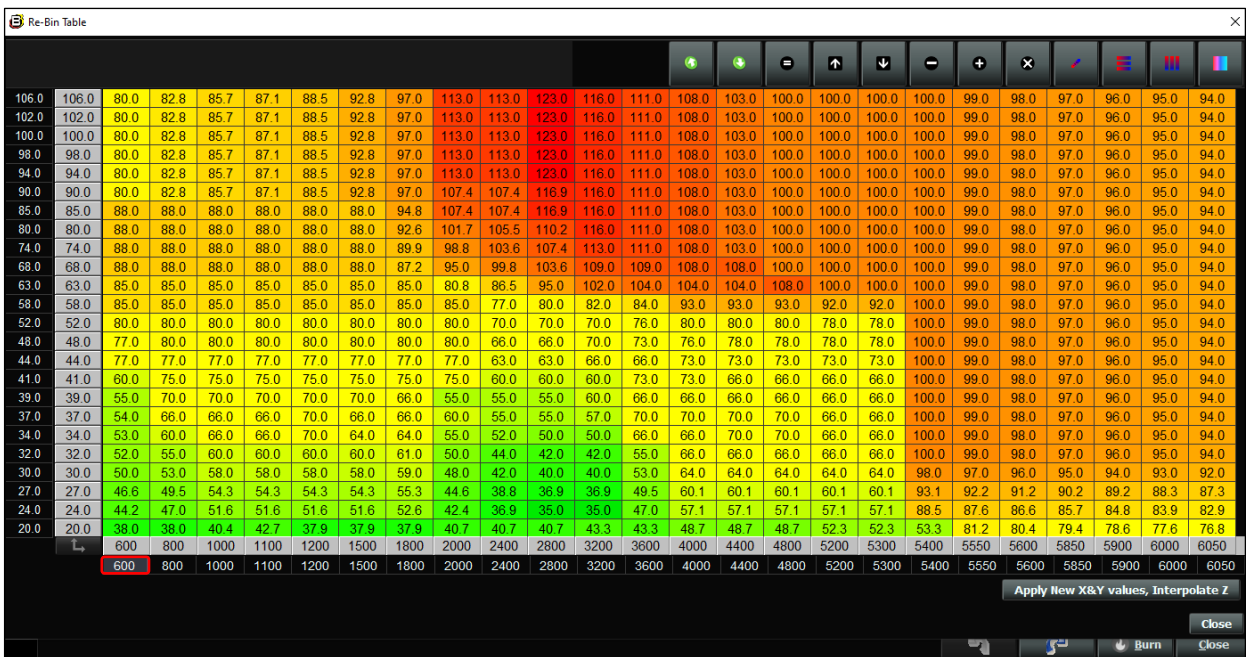
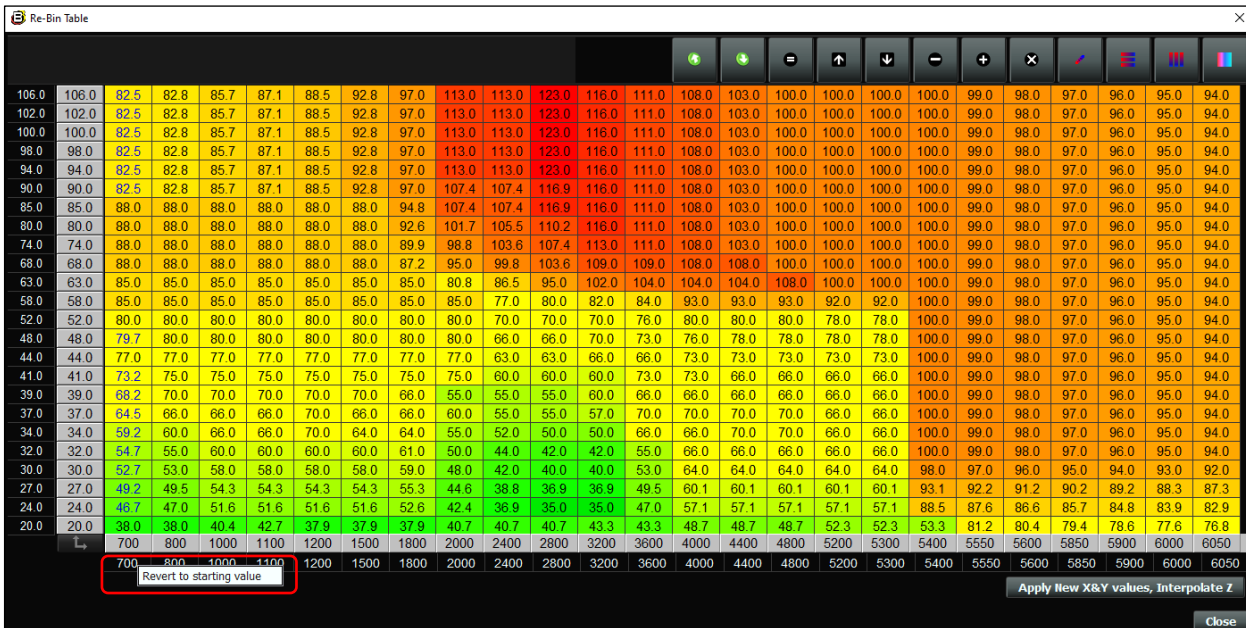


Once highlighted, type in the new desired value(s). For this example, the (600) X-Axis value was change to (700) as shown below. Repeat this step for the balance of the X & Y-Axis values you want to manually change.

To revert the changed X and Y-Axis value(s) to the original value(s), left-mouse click on the value(s), you want to change back. Once selected, right-mouse click to open the **Revert to starting value** dialogue window as shown below. Then highlight the **Revert to starting value** dialogue window by sliding the mouse over the **Revert to starting value** text. You know it is properly highlighted, when the **Revert to starting value** background turns a light gray.



Once highlighted, left-mouse click the **Revert to starting value** dialogue window to change it back to the original value.



After manually changing the X and Y-Axis value(s), highlight and select the **Apply New X&Y values, Interpolate Z** button, located in the bottom right-hand corner of the **Table** window screen as shown below. Use the left mouse key to select the **Apply New X&Y values, Interpolate Z** button. Then left-mouse click on the **Close** button to close out of the **Table** window.



Re-Bin Table

106.0	106.0	81.4	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
102.0	102.0	81.4	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
100.0	100.0	81.4	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
98.0	98.0	81.4	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
94.0	94.0	81.4	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
90.0	90.0	81.4	82.8	85.7	87.1	88.5	92.8	97.0	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
85.0	85.0	88.0	88.0	88.0	88.0	88.0	88.0	94.8	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
80.0	80.0	88.0	88.0	88.0	88.0	88.0	88.0	92.6	101.7	105.5	110.2	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
74.0	74.0	88.0	88.0	88.0	88.0	88.0	88.0	89.9	98.8	103.6	107.4	113.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
68.0	68.0	88.0	88.0	88.0	88.0	88.0	88.0	87.2	95.0	99.8	103.6	109.0	109.0	108.0	108.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
63.0	63.0	85.0	85.0	85.0	85.0	85.0	85.0	80.8	86.5	95.0	102.0	104.0	104.0	104.0	108.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
58.0	58.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	77.0	80.0	82.0	84.0	93.0	93.0	93.0	92.0	92.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
52.0	52.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	70.0	70.0	76.0	80.0	80.0	80.0	78.0	78.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
48.0	48.0	78.5	80.0	80.0	80.0	80.0	80.0	80.0	80.0	66.0	66.0	70.0	73.0	76.0	78.0	78.0	78.0	78.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
44.0	44.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	63.0	63.0	66.0	66.0	73.0	73.0	73.0	73.0	73.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
41.0	41.0	67.5	75.0	75.0	75.0	75.0	75.0	75.0	75.0	60.0	60.0	60.0	73.0	73.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
39.0	39.0	62.5	70.0	70.0	70.0	70.0	70.0	66.0	55.0	55.0	55.0	60.0	66.0	66.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
37.0	37.0	60.0	66.0	66.0	66.0	70.0	66.0	66.0	60.0	55.0	55.0	57.0	70.0	70.0	70.0	70.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
34.0	34.0	56.5	60.0	66.0	66.0	70.0	64.0	64.0	55.0	52.0	50.0	50.0	66.0	66.0	70.0	70.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
32.0	32.0	53.5	55.0	60.0	60.0	60.0	60.0	61.0	50.0	44.0	42.0	42.0	55.0	66.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
30.0	30.0	51.5	53.0	58.0	58.0	58.0	58.0	59.0	48.0	42.0	40.0	40.0	53.0	64.0	64.0	64.0	64.0	64.0	98.0	97.0	96.0	95.0	94.0	93.0	92.0
27.0	27.0	48.1	49.5	54.3	54.3	54.3	54.3	55.3	44.6	38.8	36.9	36.9	49.5	60.1	60.1	60.1	60.1	60.1	93.1	92.2	91.2	90.2	89.2	88.3	87.3
24.0	24.0	45.6	47.0	51.6	51.6	51.6	51.6	52.6	42.4	36.9	35.0	35.0	47.0	57.1	57.1	57.1	57.1	57.1	88.5	87.6	86.6	85.7	84.8	83.9	82.9
20.0	20.0	38.0	38.0	40.4	42.7	37.9	37.9	37.9	40.7	40.7	40.7	43.3	43.3	48.7	48.7	48.7	52.3	52.3	53.3	81.2	80.4	79.4	78.6	77.6	76.8
		700	800	1000	1100	1200	1500	1800	2000	2400	2800	3200	3600	4000	4400	4800	5200	5300	5400	5550	5600	5850	5900	6000	6050

Apply New X&Y values, Interpolate Z

Close

Highlight and select the **Apply New X&Y values, Interpolate Z** button. Then select **Close**.

Once the **Close** button is selected, the **Table** window, with the new X & Y-Axis values will open as shown below. To permanently save the new X & Y-Axis values, left mouse click on the red flame illuminated **Burn** button. After a momentary pause, the red illuminated **Burn** button will turn white to indicate the new X & Y-Axis values have been permanently saved. Then select the **Close** button to close out of the **Table** window.

Fuel Table1

File View

Fuel Table 1 (VE) 3D View

106.0	82.1	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
102.0	82.1	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
100.0	82.1	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
98.0	82.1	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
94.0	82.1	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
90.0	82.1	82.8	85.7	87.1	88.5	92.8	97.0	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
85.0	88.0	88.0	88.0	88.0	88.0	88.0	94.8	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
80.0	88.0	88.0	88.0	88.0	88.0	88.0	92.6	101.7	105.5	110.2	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
74.0	88.0	88.0	88.0	88.0	88.0	88.0	89.9	98.8	103.6	107.4	113.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
68.0	88.0	88.0	88.0	88.0	88.0	88.0	87.2	95.0	99.8	103.6	109.0	109.0	108.0	108.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
63.0	85.0	85.0	85.0	85.0	85.0	85.0	80.8	86.5	95.0	102.0	104.0	104.0	104.0	108.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
58.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	77.0	80.0	82.0	84.0	93.0	93.0	93.0	92.0	92.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
52.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	70.0	70.0	76.0	80.0	80.0	80.0	78.0	78.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
48.0	79.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	66.0	66.0	70.0	73.0	76.0	78.0	78.0	78.0	78.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
44.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	63.0	63.0	66.0	66.0	73.0	73.0	73.0	73.0	73.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
41.0	71.3	75.0	75.0	75.0	75.0	75.0	75.0	75.0	60.0	60.0	60.0	73.0	73.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
39.0	66.3	70.0	70.0	70.0	70.0	70.0	66.0	55.0	55.0	55.0	60.0	66.0	66.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
37.0	63.0	66.0	66.0	66.0	70.0	66.0	66.0	60.0	55.0	55.0	57.0	70.0	70.0	70.0	70.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
34.0	58.3	60.0	66.0	66.0	70.0	64.0	64.0	55.0	52.0	50.0	50.0	66.0	66.0	70.0	70.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
32.0	54.3	55.0	60.0	60.0	60.0	60.0	61.0	50.0	44.0	42.0	42.0	55.0	66.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
30.0	52.3	53.0	58.0	58.0	58.0	58.0	59.0	48.0	42.0	40.0	40.0	53.0	64.0	64.0	64.0	64.0	64.0	98.0	97.0	96.0	95.0	94.0	93.0	92.0
27.0	48.8	49.5	54.3	54.3	54.3	54.3	55.3	44.6	38.8	36.9	36.9	49.5	60.1	60.1	60.1	60.1	60.1	93.1	92.2	91.2	90.2	89.2	88.3	87.3
24.0	46.3	47.0	51.6	51.6	51.6	51.6	52.6	42.4	36.9	35.0	35.0	47.0	57.1	57.1	57.1	57.1	57.1	88.5	87.6	86.6	85.7	84.8	83.9	82.9
20.0	38.0	38.0	40.4	42.7	37.9	37.9	37.9	40.7	40.7	40.7	43.3	43.3	48.7	48.7	48.7	52.3	52.3	53.3	81.2	80.4	79.4	78.6	77.6	76.8
	700	800	1000	1100	1200	1500	1800	2000	2400	2800	3200	3600	4000	44										

Fuel Table1

File View

Fuel Table 1 (VE) 3D View

106.0	82.7	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
102.0	82.7	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
100.0	82.7	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
98.0	82.7	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
94.0	82.7	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
90.0	82.7	82.8	85.7	87.1	88.5	92.8	97.0	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
85.0	88.0	88.0	88.0	88.0	88.0	88.0	94.8	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
80.0	88.0	88.0	88.0	88.0	88.0	88.0	92.6	101.7	105.5	110.2	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
74.0	88.0	88.0	88.0	88.0	88.0	88.0	89.9	98.8	103.6	107.4	113.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
68.0	88.0	88.0	88.0	88.0	88.0	88.0	87.2	95.0	99.8	103.6	109.0	109.0	108.0	108.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
63.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	80.8	86.5	95.0	102.0	104.0	104.0	104.0	108.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
58.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	77.0	80.0	82.0	84.0	83.0	83.0	92.0	92.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	
52.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	70.0	70.0	70.0	76.0	80.0	80.0	80.0	78.0	78.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
48.0	79.9	80.0	80.0	80.0	80.0	80.0	80.0	80.0	66.0	66.0	70.0	73.0	76.0	78.0	78.0	78.0	78.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
44.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	63.0	63.0	66.0	66.0	73.0	73.0	73.0	73.0	73.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
41.0	74.1	75.0	75.0	75.0	75.0	75.0	75.0	75.0	60.0	60.0	60.0	73.0	73.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
39.0	69.1	70.0	70.0	70.0	70.0	70.0	66.0	55.0	55.0	55.0	60.0	66.0	66.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
37.0	65.3	66.0	66.0	66.0	66.0	66.0	66.0	60.0	55.0	55.0	57.0	70.0	70.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
34.0	59.6	60.0	66.0	66.0	70.0	64.0	64.0	55.0	52.0	50.0	50.0	66.0	66.0	70.0	70.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
32.0	54.9	55.0	60.0	60.0	60.0	60.0	61.0	50.0	44.0	42.0	42.0	55.0	66.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
30.0	52.9	53.0	58.0	58.0	58.0	58.0	59.0	48.0	42.0	40.0	40.0	53.0	64.0	64.0	64.0	64.0	64.0	98.0	97.0	96.0	95.0	94.0	93.0	92.0
27.0	49.4	49.5	54.3	54.3	54.3	54.3	55.3	44.6	38.8	36.9	36.9	49.5	60.1	60.1	60.1	60.1	60.1	93.1	92.2	91.2	90.2	89.2	88.3	87.3
24.0	46.9	47.0	51.6	51.6	51.6	51.6	52.6	42.4	36.9	35.0	35.0	47.0	57.1	57.1	57.1	57.1	57.1	88.5	87.6	86.6	85.7	84.8	83.9	82.9
20.0	36.0	38.0	40.4	42.7	37.9	37.9	37.9	40.7	40.7	40.7	43.3	43.3	48.7	48.7	48.7	52.3	52.3	53.3	81.2	80.4	79.4	78.6	77.6	76.8
L	700	800	1000	1100	1200	1500	1800	2000	2400	2800	3200	3600	4000	4400	4800	5200	5300	5400	5550	5600	5850	5900	6000	6050

RPM

Apply New X&Y values, Interpolate Z

Close

After the Burn button's illuminated flame turns white, select the Close button to close out of the Table window.

We will now explain how to use the interpolate functionality to rescale the **Table** window X & Y-Axis values.

Once the Table window, displaying the secondary X & Y-Axis, is opened you can adjust the individual X and Y-Axis values by interpolating between the X and Y-Axis values you want to change.

Re-Bin Table

106.0	106.0	80.0	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
102.0	102.0	80.0	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
100.0	100.0	80.0	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
98.0	98.0	80.0	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
94.0	94.0	80.0	82.8	85.7	87.1	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
90.0	90.0	80.0	82.8	85.7	87.1	88.5	92.8	97.0	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
85.0	85.0	88.0	88.0	88.0	88.0	88.0	88.0	94.8	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
80.0	80.0	88.0	88.0	88.0	88.0	88.0	88.0	92.6	101.7	105.5	110.2	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
74.0	74.0	88.0	88.0	88.0	88.0	88.0	88.0	89.9	98.8	103.6	107.4	113.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
68.0	68.0	88.0	88.0	88.0	88.0	88.0	88.0	87.2	95.0	99.8	103.6	109.0	109.0	108.0	108.0	100.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
63.0	63.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	80.8	86.5	95.0	102.0	104.0	104.0	104.0	108.0	100.0	100.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
58.0	58.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	77.0	80.0	82.0	84.0	83.0	83.0	92.0	92.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	94.0	
52.0	52.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	70.0	70.0	70.0	76.0	80.0	80.0	80.0	78.0	78.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	
48.0	48.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	66.0	66.0	70.0	73.0	76.0	78.0	78.0	78.0	78.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	
44.0	44.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	63.0	63.0	66.0	66.0	73.0	73.0	73.0	73.0	73.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	
41.0	41.0	60.0	75.0	75.0	75.0	75.0	75.0	75.0	60.0	60.0	60.0	73.0	73.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	
39.0	39.0	55.0	70.0	70.0	70.0	70.0	70.0	66.0	55.0	55.0	55.0	60.0	66.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	
37.0	37.0	54.0	66.0	66.0	66.0	70.0	66.0	66.0	60.0	55.0	55.0	57.0	70.0	70.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	
34.0	34.0	53.0	60.0	66.0	66.0	70.0	64.0	64.0	55.0	52.0	50.0	50.0	66.0	66.0	70.0	70.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0
32.0	32.0	52.0	55.0	60.0	60.0	60.0	60.0	61.0	50.0	44.0	42.0	42.0	55.0	66.0	66.0	66.0	66.0	100.0	99.0	98.0	97.0	96.0	95.0	94.0	
30.0	30.0	50.0	53.0	58.0	58.0	58.0	58.0	59.0	48.0	42.0	40.0	40.0	53.0	64.0	64.0	64.0	64.0	98.0	97.0	96.0	95.0	94.0	93.0	92.0	
27.0	27.0	46.6	49.5	54.3	54.3	54.3	54.3	55.3	44.6	38.8	36.9	36.9	49.5	60.1	60.1	60.1	60.1	93.1	92.2	91.2	90.2	89.2	88.3	87.3	
24.0	24.0	44.2	47.0	51.6	51.6	51.6	51.6	52.6	42.4	36.9	35.0	35.0	47.0	57.1	57.1	57.1	57.1	88.5	87.6	86.6	85.7	84.8	83.9	82.9	
20.0	20.0	38.0	38.0	40.4	42.7	37.9	37.9	37.9	40.7	40.7	40.7	43.3	43.3	48.7	48.7	48.7	52.3	52.3	53.3	81.2	80.4	79.4	78.6	77.6	76.8
L	600	800	1000	1100	1200	1500	1800	2000	2400	2800	3200	3600	4000	4400	4800	5200	5300	5400	5550						

To use the interpolate functionality to adjust the X & Y-Axis values, select the individual value(s), by left mouse clicking on the X & Y-Axis value(s). With the mouse left mouse key held down, select the X & Y-Axis value(s) to be interpolated. The selected X & Y-Axis will turn to a light gray background as shown below.

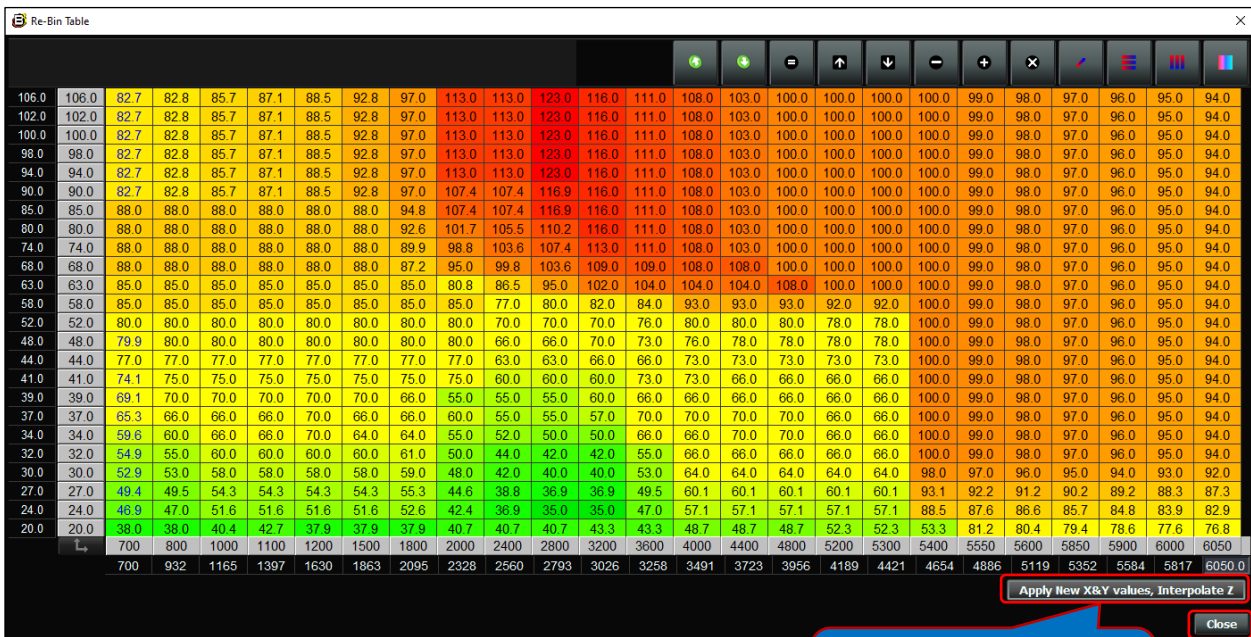
Once the X-Axis value(s) have been highlighted, right-mouse click on the highlighted X-Axis values to open the **Interpolated selected cell values** dialogue window, Once opened, highlight the **Interpolated selected cell values** text and left mouse click. Once the left-mouse is clicked, the highlighted X-Axis values between the farthest to the left and farthest to the right X-Axis values will be interpolated as shown below.

The screenshot shows the 'Re-Bin Table' window with a grid of numerical data. A red selection box highlights a column of values. On the right side of the window, there are several status indicators: 'Runtime Data Rate (/sec)' at 99.1, 'Records Logged (Records)' at 0, 'Vehicle Speed (MPH)' at 0, 'X axis Acceleration (G)' at 0.02, and 'Y axis Acceleration (G)' at 0.02. At the bottom right of the grid, there is a button labeled 'Interpolate' which is highlighted by a blue callout box with the text 'Highlight and select Interpolate selected cell values'.

This screenshot shows the same 'Re-Bin Table' window, but with the 'Interpolated selected cell values' dialog box open. The dialog box displays the interpolated values for the selected column, showing a smooth transition between the original values. A red callout box at the bottom of the dialog box contains the text 'New X-Axis interpolated values.'.

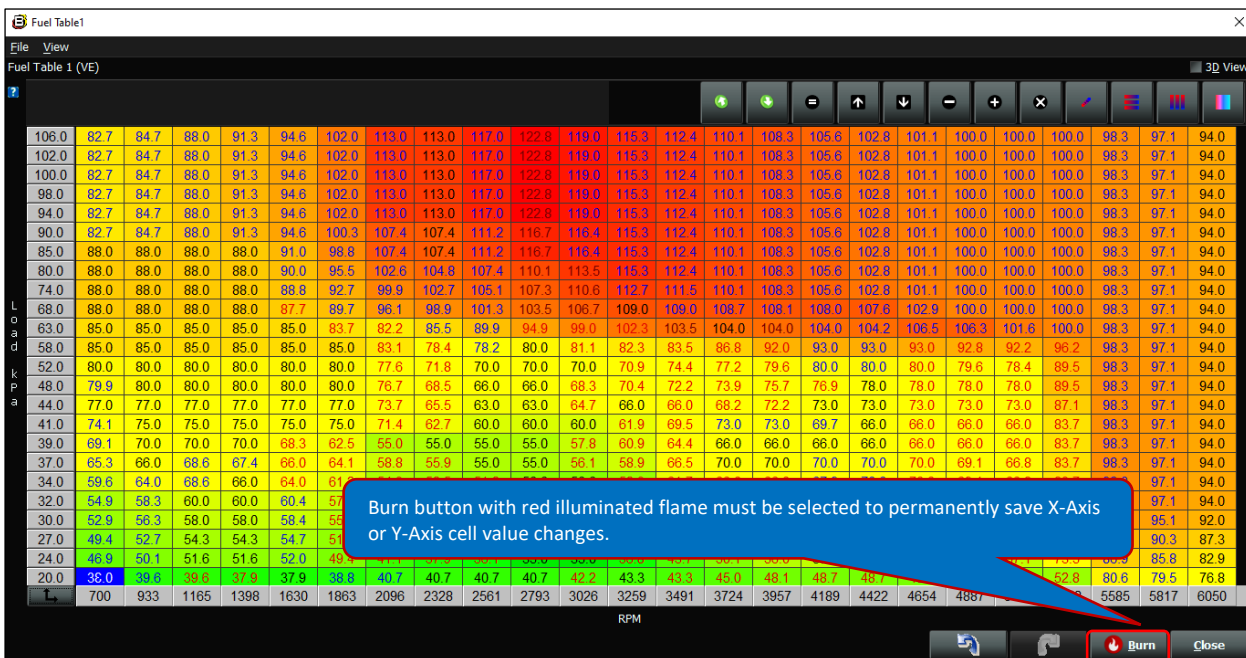


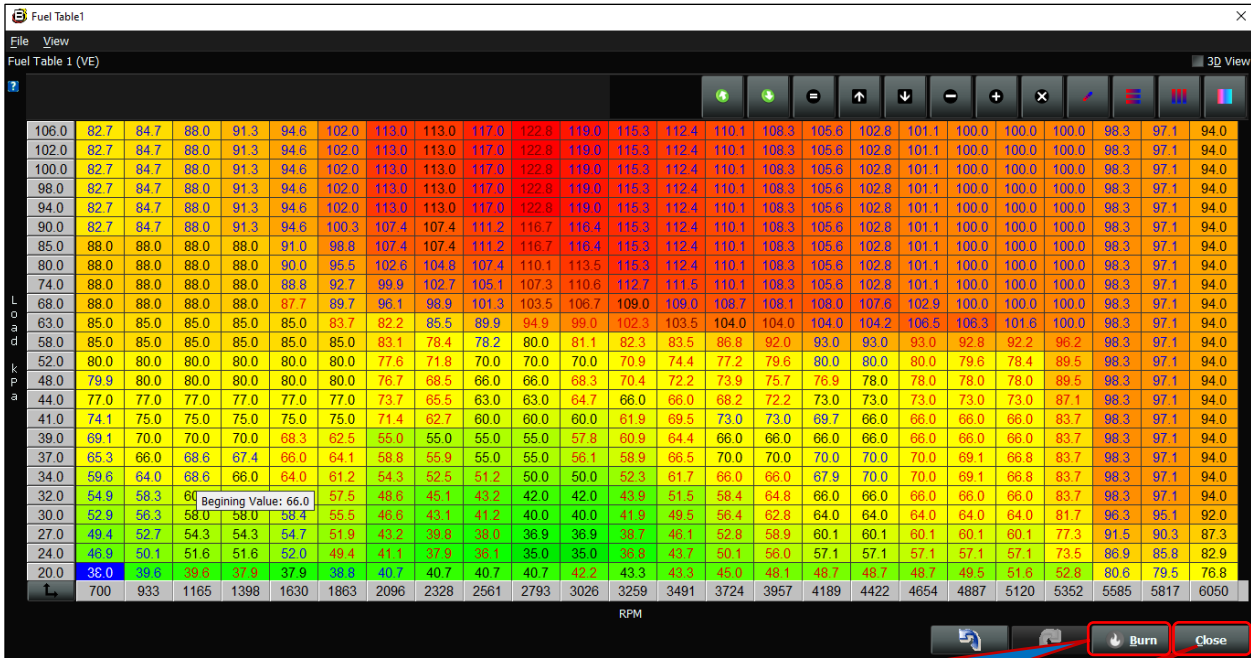
Once the new X-Axis cell values have been interpolated, highlight and left-mouse click on the **Apply New X&Y values, Interpolate Z** button located in the bottom right-hand corner of the **Table** window screen as shown below. Use the left mouse key to select the **Apply New X&Y values, Interpolate Z** button. Then left-mouse click on the **Close** button to close out of the Table window.



Highlight and select the Apply New X&Y values, Interpolate Z button. Then select Close.

Once the **Close** button is selected, the **Table** window, with the new X & Y-Axis values will open as shown below. To permanently save the new X & Y-Axis values, left mouse click on the red flame illuminated burn button. After a momentary pause, the red illuminated Burn button will turn white to indicate the new X & Y-Axis values have been permanently saved. Then select the **Close** button to close out of the **Table** window.

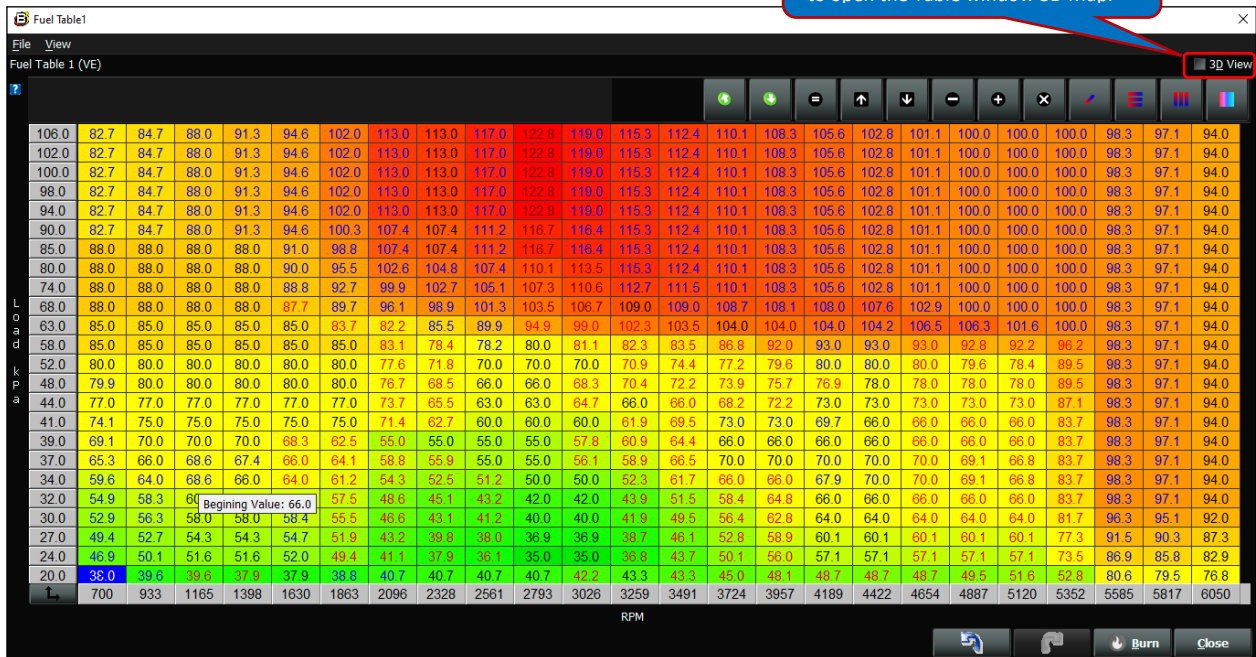




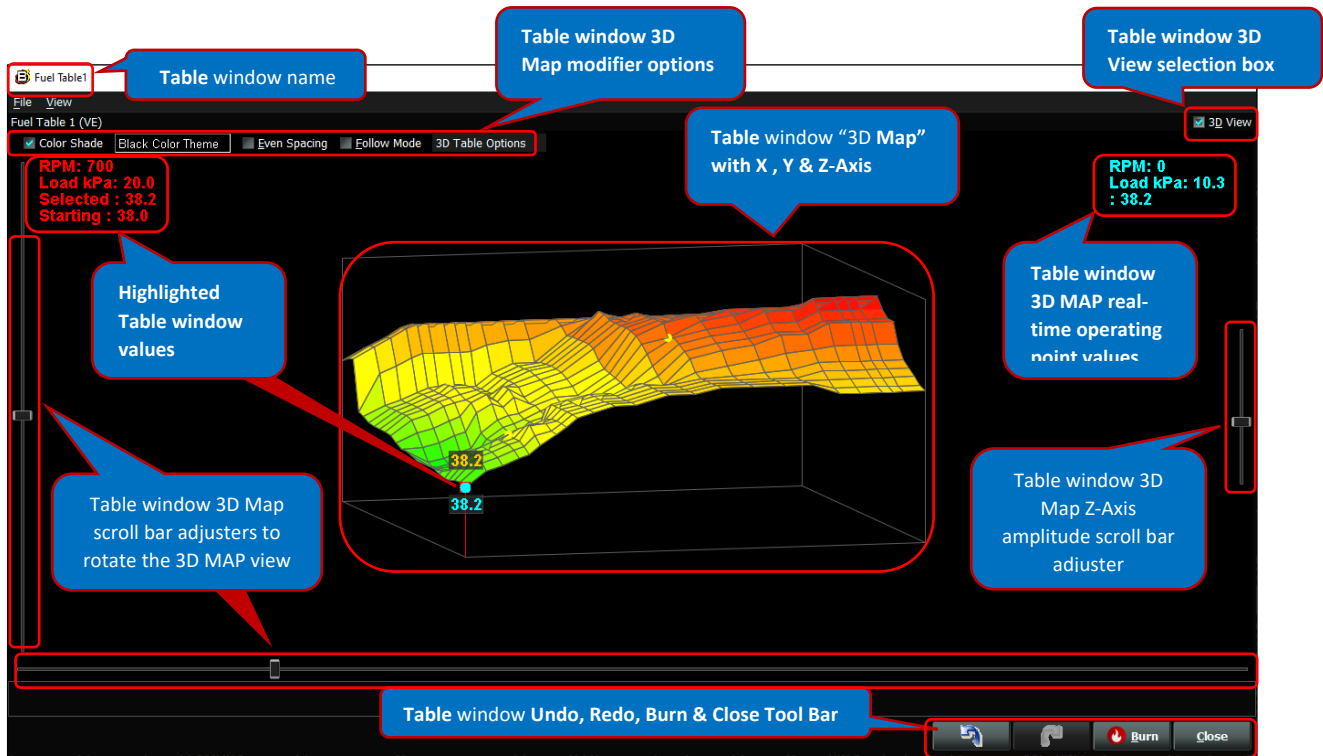
After the Burn button's illuminated flame turns white, select the Close button to close out of the Table window.

Table window Maps can be viewed as a 3D plot to quickly ensure there are no bad data points and to better visualize the **Table** window Map changes you are making. You can open the Table window 3D Map for the Table you are working on by left-mouse clicking the **3D View** box in the upper right-hand corner of the Table window screen as shown below.

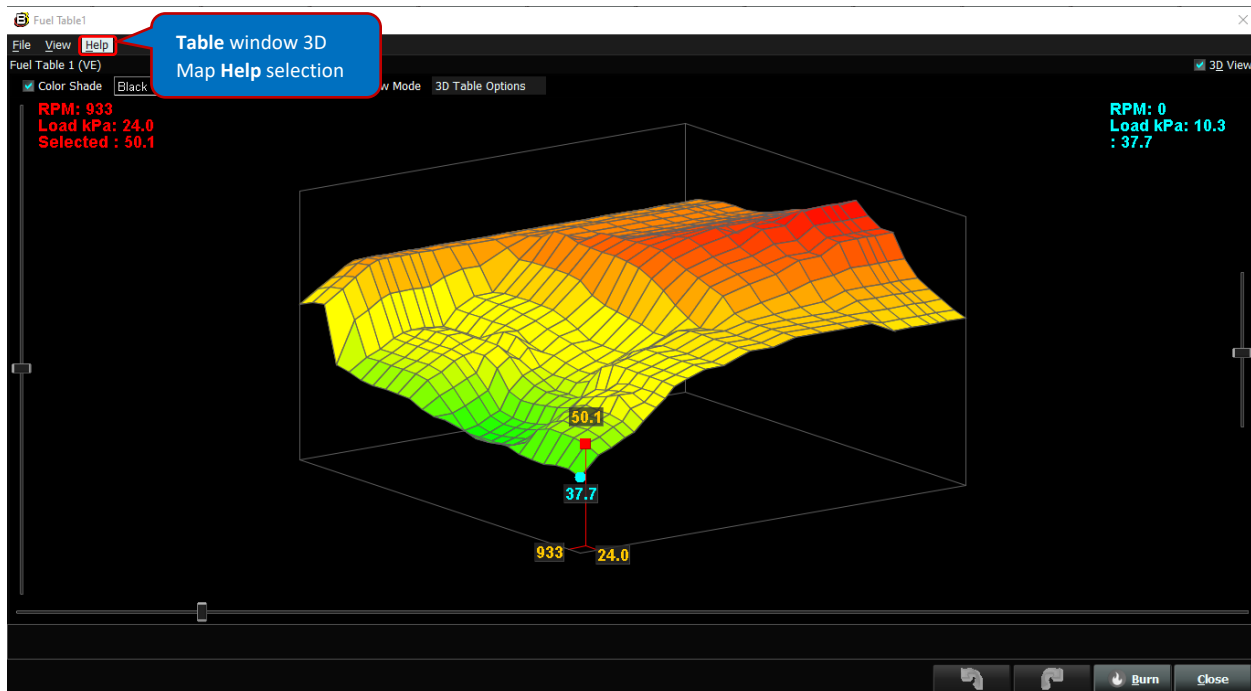
Left mouse click on the 3D View box to open the Table window 3D Map.

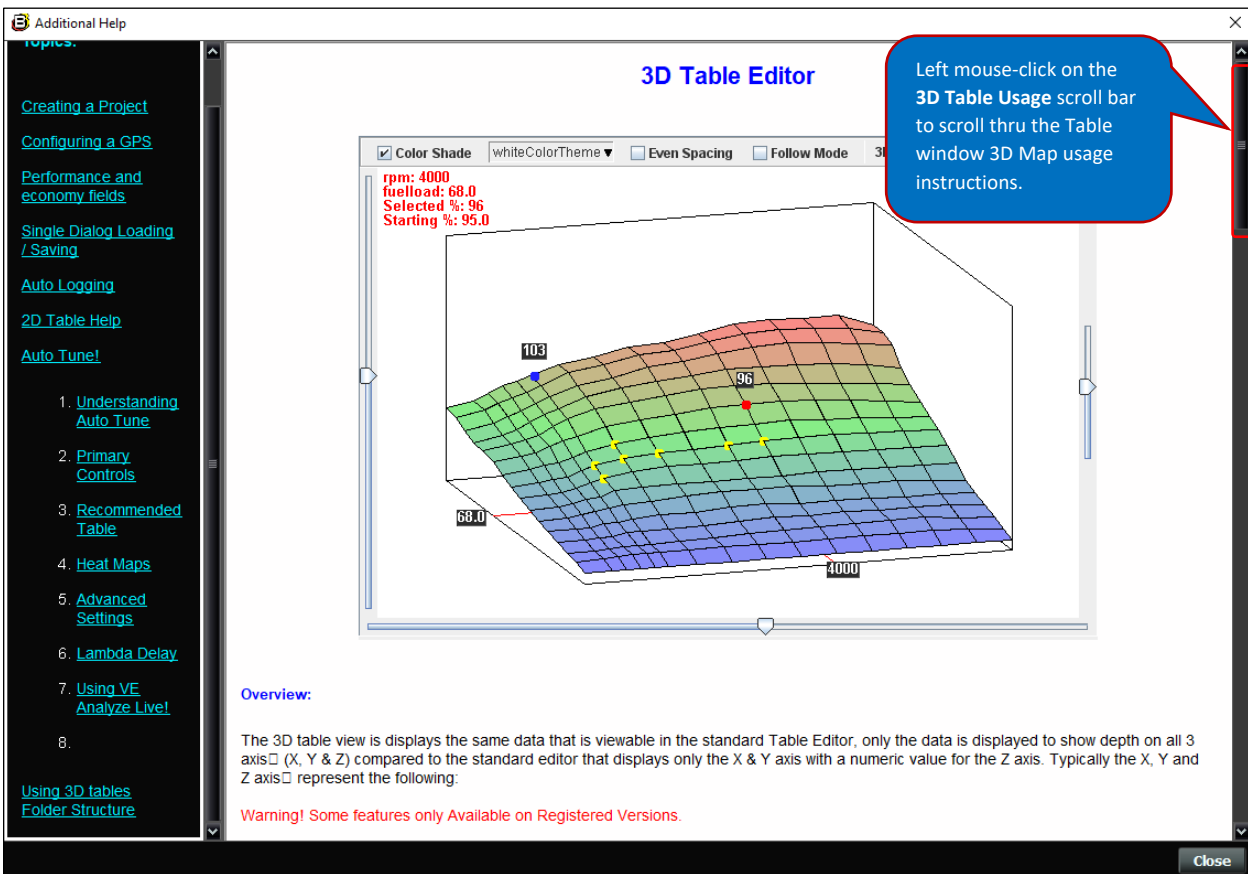
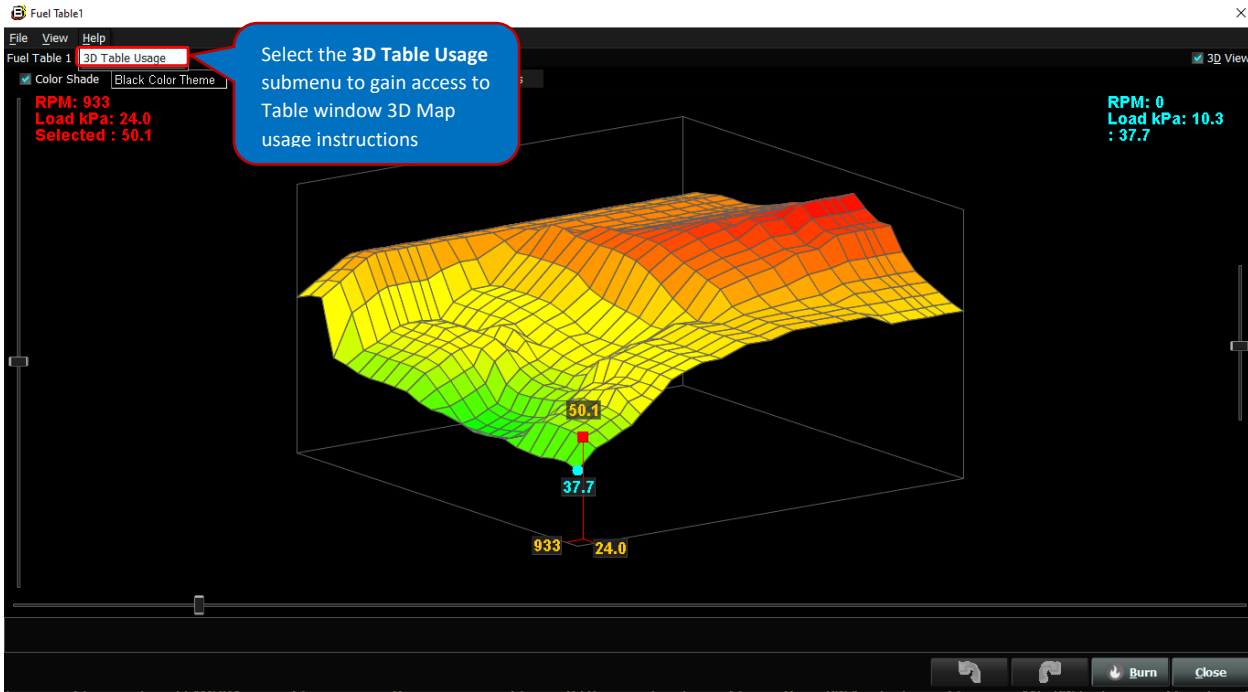






Once the **3D View** box is left-mouse clicked on the following Table window 3D Map will open.



The following instructions will defer to the details found under the Table window 3D Map **Help** menu. The best way to better understand the Table window 3D MAP functionality is to select the **3D Table Usage** dropdown under the **Help** selection as shown below. Otherwise, the balance of the Table window 3D Map functionality is similar to the Table window 2D Map functionality and will not be covered in this section of the instructions.





Don't forget as you make changes to the **Table** window 3D Map, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

14. HOW TO EDIT AND SAVE TABLE WINDOWS

[Back to Table of Contents](#)

We will now focus on how to Edit and Save (Burn) **Table** windows "cell" values by primarily using the Table window Modifier Buttons.

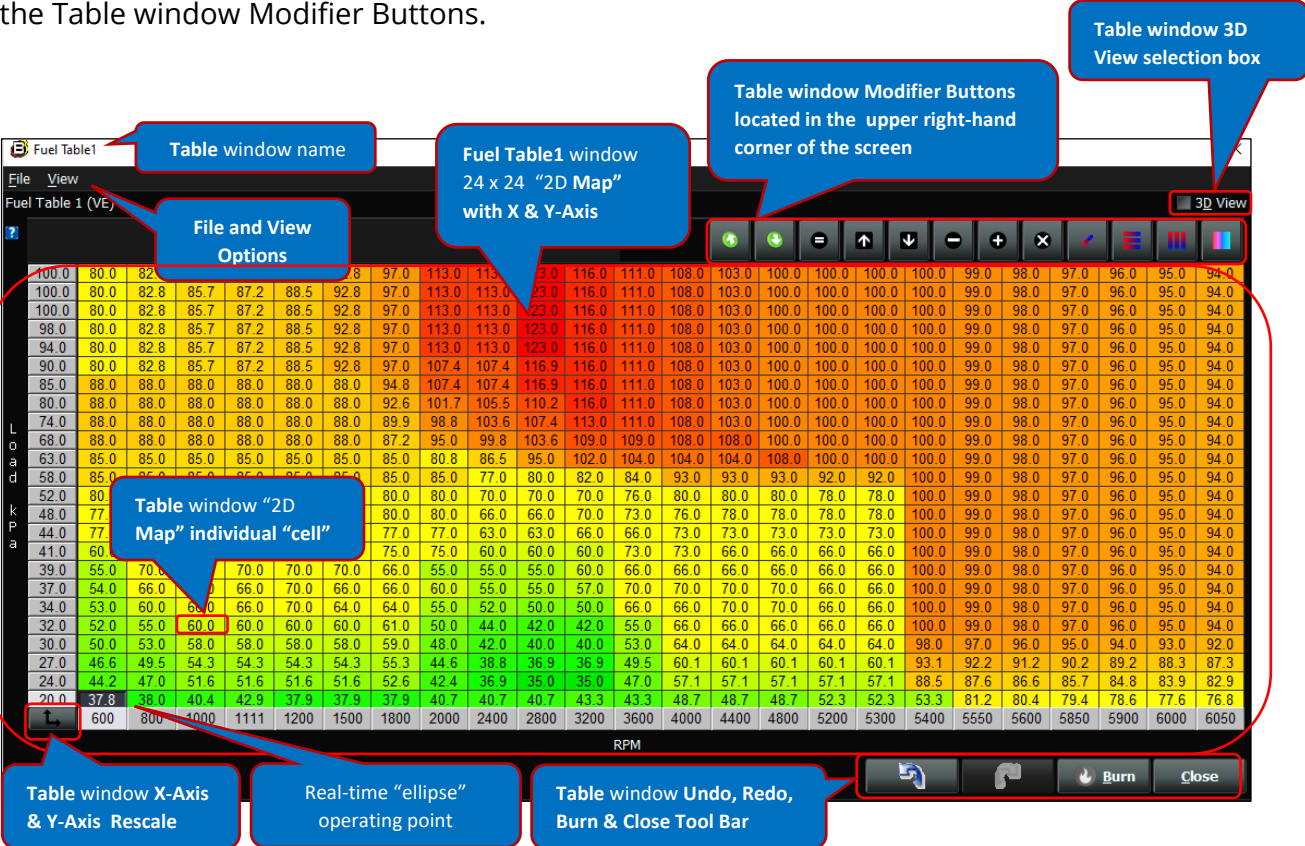


Table window name

File and View Options

Table window 2D Map' individual "cell"

Table window X-Axis & Y-Axis Rescale

Real-time "ellipse" operating point

Table window Undo, Redo, Burn & Close Tool Bar

Table window Modifier Buttons located in the upper right-hand corner of the screen

Table window 3D View selection box

Fuel Table1 window 24 x 24 "2D Map" with X & Y-Axis


Load	600	800	1000	1111	1200	1500	1800	2000	2400	2800	3200	3600	4000	4400	4800	5200	5300	5400	5550	5600	5850	5900	6000	6050	
100.0	80.0	82.0	85.0	87.0	88.0	89.0	90.0	91.0	92.0	93.0	94.0	95.0	96.0	97.0	98.0	99.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
80.0	80.0	82.8	85.7	87.2	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
80.0	80.0	82.8	85.7	87.2	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
98.0	80.0	82.8	85.7	87.2	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
94.0	80.0	82.8	85.7	87.2	88.5	92.8	97.0	113.0	113.0	123.0	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
90.0	80.0	82.8	85.7	87.2	88.5	92.8	97.0	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
85.0	88.0	88.0	88.0	88.0	88.0	88.0	94.8	107.4	107.4	116.9	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
80.0	88.0	88.0	88.0	88.0	88.0	88.0	92.6	101.7	105.5	110.2	116.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
74.0	88.0	88.0	88.0	88.0	88.0	88.0	89.9	98.8	103.6	107.4	113.0	111.0	108.0	103.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
68.0	88.0	88.0	88.0	88.0	88.0	88.0	87.2	95.0	99.8	103.6	109.0	109.0	108.0	108.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
63.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	80.8	86.5	95.0	102.0	104.0	104.0	104.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
58.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	77.0	80.0	82.0	84.0	93.0	93.0	92.0	92.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
52.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	70.0	70.0	76.0	80.0	80.0	80.0	78.0	78.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
48.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	66.0	66.0	70.0	73.0	76.0	78.0	78.0	78.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
44.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	63.0	63.0	66.0	66.0	73.0	73.0	73.0	73.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
41.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	66.0	66.0	66.0	66.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
39.0	55.0	70.0	70.0	70.0	70.0	70.0	66.0	55.0	55.0	60.0	66.0	66.0	66.0	66.0	66.0	66.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
37.0	54.0	66.0	66.0	66.0	66.0	66.0	66.0	60.0	55.0	55.0	57.0	70.0	70.0	70.0	70.0	66.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
34.0	53.0	60.0	60.0	66.0	70.0	64.0	64.0	55.0	52.0	50.0	50.0	66.0	66.0	70.0	70.0	66.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
32.0	52.0	55.0	60.0	60.0	60.0	61.0	50.0	44.0	42.0	42.0	55.0	66.0	66.0	66.0	66.0	66.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
30.0	50.0	53.0	58.0	58.0	58.0	59.0	48.0	42.0	40.0	40.0	53.0	64.0	64.0	64.0	64.0	64.0	98.0	97.0	96.0	95.0	94.0	93.0	92.0	92.0	
27.0	46.6	49.5	54.3	54.3	54.3	55.3	44.6	38.8	36.9	36.9	49.5	60.1	60.1	60.1	60.1	60.1	93.1	92.2	91.2	90.2	89.2	88.3	87.3	87.3	
24.0	44.2	47.0	51.6	51.6	51.6	52.6	42.4	36.9	35.0	35.0	47.0	57.1	57.1	57.1	57.1	57.1	88.5	87.6	86.6	85.7	84.8	83.9	82.9	82.9	
20.0	37.8	38.0	40.4	42.9	37.9	37.9	40.7	40.7	40.7	43.3	43.3	48.7	48.7	48.7	48.7	52.3	53.3	53.3	52.3	51.2	50.4	49.4	48.6	47.6	47.6

Before getting started on how to edit and save the Table windows, below are a couple key notes worth mentioning.

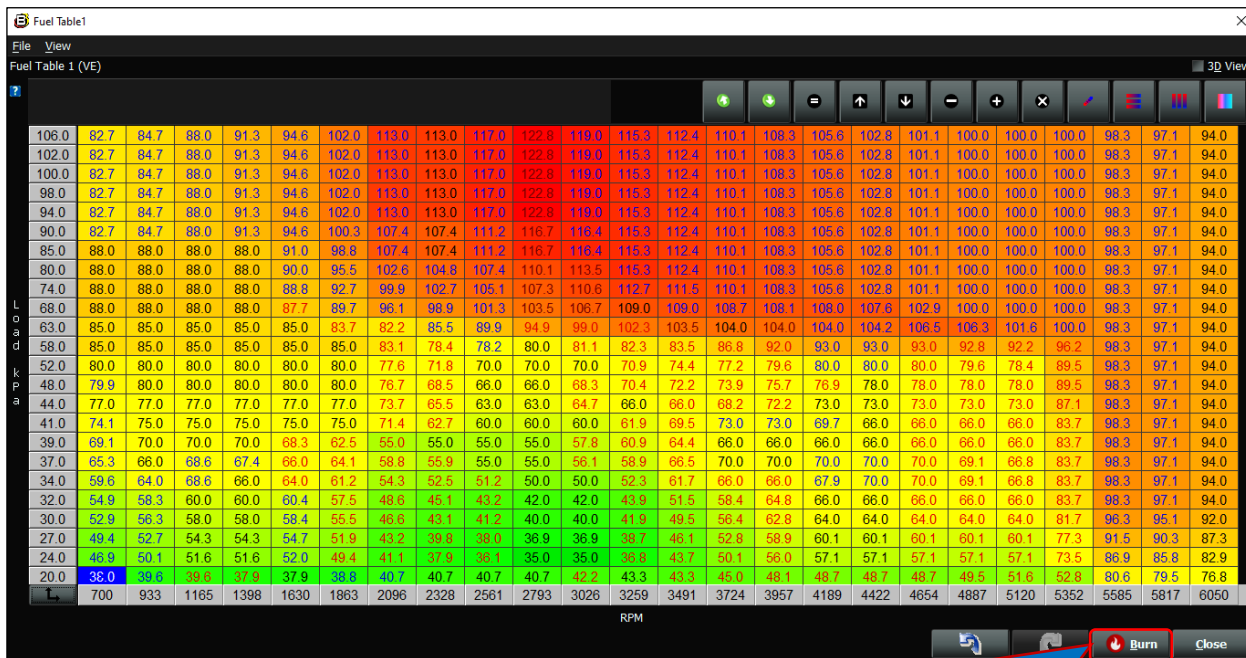
Note: The **Undo** or **Redo** buttons, located in the lower right-hand corner of the screen, can be used to undo or redo the last changes made to the **Table** window cell values.

Note: The **Close** button, located in the lower right-hand corner of the screen, is used to close out of the Curve window screen. **The Curve window edited changes are not saved when the Close button is selected. Edited changes are only permanently saved when the Burn button is selected!**

There are a couple of very important things to note at this point;

The first is, as soon as you select and change any of the Table window cell value(s) in the Table 2D Map, you will see the flame icon in the **Burn**  button, located in the lower right-hand corner of the screen, will illuminate red, as shown below, to indicate the BigComm Pro software is anticipating a change to take place. **You must left-mouse click on the illuminated red flame Burn button after making any changes to Table window cell values in order to permanently save the edited changes. If the illuminated red flamed Burn button is not left-mouse clicked on, the edited changes will not be saved!**

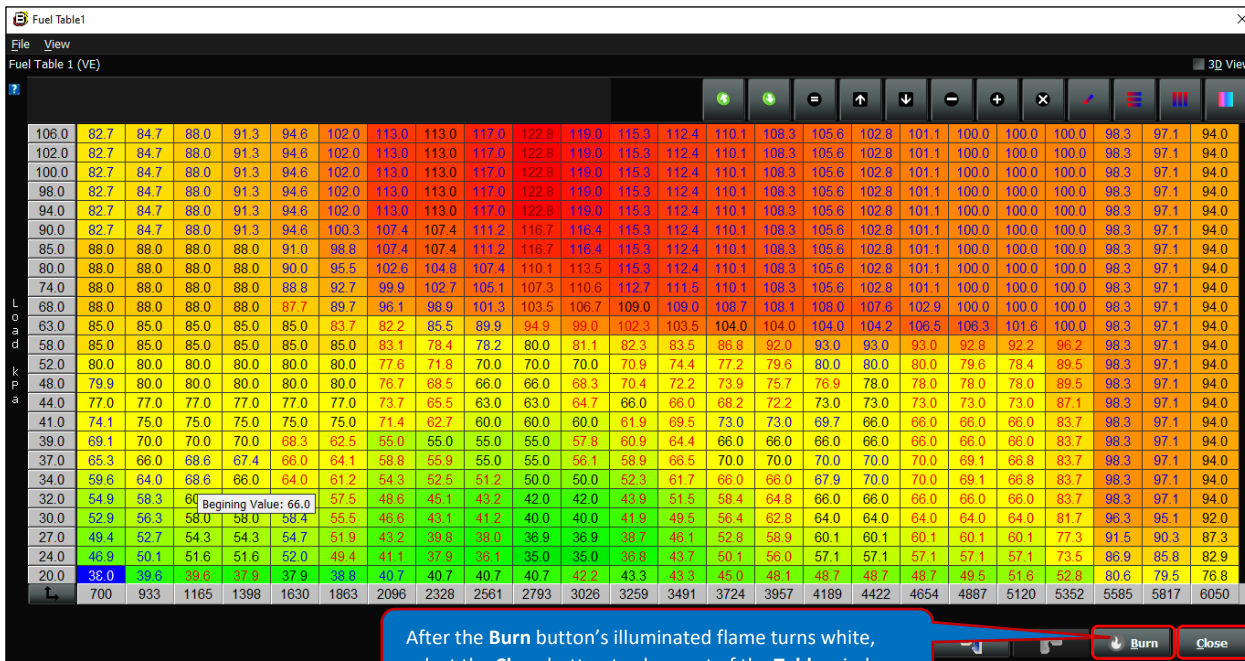
The second is, **after left-mouse clicking on the Burn button, the illuminated red flame icon in the Burn button will illuminate back to white, to indicate the edited changes have been permanently saved** as shown below.



Burn button with red illuminated flame must be selected to permanently save Table window 2D Map cell value changes.

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There are many ways to edit the **Table** window “cell” values using the Modifier Buttons. A description on how to use each of the Modifier Buttons is detailed below.

Editing the Table window “cell” values using the Modifier Buttons



The Table window 2D Map cell values can be edited using the **Modifier Buttons** located in the upper right-hand corner of the **Table** window and highlighted above. The cell values can be edited individually, grouped or all together by depressing and holding down on the left-mouse key and highlighting one cell or rows and/or columns of cells you want to edit. Once highlighted, the cells will turn a gray/blue, to indicate the cell values are ready to be edited using the **Modifier Buttons**. You can then select the Modifier Buttons to add, subtract, increase, etc the cell values. How to edit the 2D Table window Map cell values using each of the Modifier Buttons is explained below.

Note: **Table** window 2D Table Map cell values can be “copy” & “paste” into other **Table** window 2D Table Maps using CTRL-C to copy and CTRL-V to paste.



Green/white up arrow “Export Table” Modifier Button

Green/white up arrow “Export Table” is the first Modifier Button. It is not used to edit the Table window 2D Map cell values. It is used to save the current 2D Table. You do so by selecting the **Green/white up arrow “Export Table” Modifier Button** using the left-mouse key. Once selected, a dialogue window will open with a default **File Name**. At this point, you can save the 2D Table using the default file name or type in a file name you want to use and select **Save**. Once **Save** is selected, the 2D Table will be saved.







Green/white down arrow “Import Table” Modifier Button

Green/white down arrow “Import Table” is the second Modifier Button. It is not used to edit the Table window 2D Map cell values. It is used to import an existing 2D Table. You do so by selecting the **Green/white up arrow “Import Table” Modifier Button** using the left-mouse key. Once selected, a dialogue window will open with existing 2D Table files that can be imported. At this point, you can select an existing 2D Table and select **Open**. Once **Open** is selected, the 2D Table will be imported.



Equal “Set To” Modifier Button

Equal “Set To” is the third Modifier Button. It is used to set the highlighted 2D Table cell value(s) to the same value(s) / number(s). For example, if you want to set (9) cell values to same number, you use the **Equal “Set To” Modifier Button**. You do so by highlighting the (9) 2D Table cells and then select the **Equal “Set To” Modifier Button** using the left-mouse Button. Once selected, a dialogue window will open to ask you to **Set Selected Cells to:** At this point, type in the number you want for all (9) cell values and select **OK**. Once **OK** is selected, the (9) new “equal” cell values will appear in the 2D **Table** window.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to “close” out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

Note: If at any point you close out of the **Table** window, the Back-Arrow **Undo** or Forward-Arrow **Redo** buttons will go grey indicating you cannot go back or forward. This is because the BigComm Pro software only keeps track of the edited changes while the **Table** window screen is open.







Up Arrow “Increment” Modifier Button

Up Arrow “Increment” is the fourth Modifier Button. It is used to increase the highlighted 2D Table cell value(s) by 0.1 increments, which is the default incremental step change. For example, if you want to increase (9) cell values by the same increment, you use the **Up Arrow “Increment” Modifier Button**. You do so by highlighting the (9) cells in the 2D Table and then select the **Up Arrow “Increment” Modifier Button** using the left-mouse key. Once selected, continue to left-mouse click on the **Up Arrow “Increment” Modifier Button**. Every time the left-mouse is clicked, the cell values will increase by 0.1. As you are left-mouse clicking, the (9) “0.1

incremented" cell values will appear in the 2D **Table** window. Continue to click the left-mouse button until reaching the new desired cell values.

Note: 0.1 increment is the default increment step change. You can change the incremental step change amount, by first highlighting a single or multiple cell value(s) in the 2D **Table** window by depressing the left-mouse key. Once highlighted, click the right-mouse key to open a dialogue window and select **Set increment amount** using the right or left-mouse key. Once selected, another dialogue window will open asking for the **Preferred Cell Increment Size**. At this point, type in the desired increment step change and left-mouse click on **OK**. This will be the new default increment step change.




Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**



Down Arrow "Decrement" Modifier Button

Down Arrow "Decrement" is the fifth Modifier Button. It is used to decrease the highlighted 2D Table cell value(s) by 0.1 increments. For example, if you want to decrease (9) cell values by the same increment, you to use the **Down Arrow "Decrement" Modifier Button**. You do so by highlighting the (9) cells in the 2D table and then select the **Down Arrow "Decrement" Modifier Button** using the left-mouse key. Once selected, continue to left-mouse click on the **Down Arrow "Decrement" Modifier Button**. Every time the left-mouse is clicked, the cell values will decrease by 0.1. As you are left-mouse clicking, the (9) "0.1 decremented" cell values will appear in the 2D **Table** window. Continue to click the left-mouse button until reaching the new desired cell values.

Note: 0.1 decrement is the default decrement step change. You can change the decremental step change amount, by first highlighting a single or multiple cell value(s) in the 2D **Table** window by depressing the left-mouse key. Once highlighted, click the right-mouse key to open a dialogue window and select **Set increment amount** using the right or left-mouse key. Once selected, another dialogue window will open asking for the **Preferred Cell Increment Size**. At this point, type in the desired increment step change and left-mouse click on **OK**. This will be the new default decrement step change.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done







editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close button is selected. The Close button is only used to “close” out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**



Minus “Decrease By” Modifier Button





Minus “Decrease By” is the sixth Modifier Button. It is used to decrease the highlighted 2D **Table** cell value(s) by the same amount. For example, if you want to decrease (9) cell values by the same amount, you use the **Minus “Decrease By” Modifier Button**. You do so by highlighting the (9) cells in the 2D Table and then select the **Minus “Decrease By” Modifier Button** using the left mouse key. Once selected, a dialogue window will open to ask you to **Decrease Selected Cells by:** At this point, type in the number you want all (9) cell values to be decreased by and select **OK**. Once **OK** is selected, the (9) new “decreased” cell values will appear in the 2D **Table** window.

Don’t forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don’t forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to “close” out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**







Plus “Increase By” Modifier Button

Plus “Increase By” is the seventh Modifier Button. It is used to increase the highlighted 2D **Table** cell value(s) by the same amount. For example, if you want to increase (9) cell values by the same amount, you use the **Plus “Increase By” Modifier Button**. You would do so by highlighting the (9) cells in the 2D Table and then select the **Plus “Increase By” Modifier Button** using the left-mouse key. Once selected, a dialogue window will open to ask you to **Increase Selected Cells by:** At this point, type in the number you want all (9) cell values to be increased by and select **OK**. Once **OK** is selected, the (9) new “increased” cell values will appear in the 2D **Table** window.

Don’t forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don’t forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to “close” out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**





Multiply "Scale By" Modifier Button

Multiply "Scale By" is the eight Modifier Button. It is used to increase or decrease the highlighted 2D Table cell value(s) by the same percentage. For example, if you want to increase or decrease the (9) cell values by the same percentage, you use the **Multiply "Scale By" Modifier Button**. You do so by highlighting the (9) cells in the 2D Table and then select the **Multiply "Scale By" Modifier Button** using the left-mouse key. Once selected, a dialogue window will open to ask you to **Multiply Selected Cells by: ex. 1.2 = raise by 20%**. At this point, type in the number (i.e. percentage) you want all (9) cell values to be increased or decreased by as a percentage and select **OK**. For example, if you want to increase all (9) cell values by 10%, you would enter 1.1. If you want to decrease all (9) cell values by 10%, you would enter .9. Once **OK** is selected, the (9) new "percent increased, or percent decreased" cell values will appear in the 2D **Table** window.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

Interpolate Modifier Button





Interpolate is the ninth Modifier Button. It is used to interpolate the cell value(s) in the 2D **Table** relative to the furthest to the left, right, upper and lower highlighted cells. The **Interpolate Modifier Button** is an effective way to quickly change the profile of **Table** window's 2D Table. For example, if you want to interpolate between (9) highlighted cell values, you use the **Interpolate Modifier Button**. You do so by first highlighting the (9) cells in the 2D table and then select the **Interpolate Modifier Button** using the left mouse key. Once the **Interpolate Modifier Button** is selected, the cell values in the (5 of the 9) highlighted cells, will be interpolated evenly between the furthest to the left, right, upper and lower highlighted cells and the (5) new "interpolated" cell values will appear in the 2D **Table** window.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**



Interpolate Horizontal Modifier Button





Interpolate Horizontal is the tenth Modifier Button. It is used to interpolate the cell value(s) in the 2D **Table** between to the furthest to the left and right horizontal highlighted cells. The **Interpolate Horizontal Modifier Button** is an effective way to quickly change the profile of **Table** window's 2D Table. For example, if you want to interpolate between (12) highlighted horizontal cell values, you use the **Interpolate Horizontal Modifier Button**. You do so by first highlighting the (12, 3 rows x 4 column) cells in the 2D table and then select the **Interpolate Horizontal Modifier Button** using the left mouse key. Once the **Interpolate Horizontal Modifier Button** is selected, the cell values in (6 of the 12) highlighted cells, will be interpolated evenly between the furthest to the left and right horizontal highlighted cells and the (6) new horizontal "interpolated" cell values will appear in the 2D **Table** window.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**



Interpolate Vertical Modifier Button





Interpolate Vertical is the eleventh Modifier Button. It is used to interpolate the cell value(s) in the 2D **Table** between to the furthest to the upper and lower vertical highlighted cells. The **Interpolate Vertical Modifier Button** is an effective way to quickly change the profile of **Table** window's 2D Table. For example, if you want to interpolate between (12) highlighted vertical cell values, you use the **Interpolate Horizontal Modifier Button**. You do so by first highlighting the (12, 3 rows x 4 column) cells in the 2D table and then select the **Interpolate Vertical Modifier Button** using the left mouse key. Once the **Interpolate Vertical Modifier Button** is selected, the cell values in (4 of the 12) highlighted cells, will be interpolated evenly between the furthest to the upper and lower vertical highlighted cells and the (4) new horizontal "interpolated" cell values will appear in the 2D **Table** window.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**



Smooth Cells Modifier Button

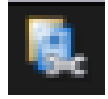
Smooth Cells is the twelfth Modifier Button. It is used to interpolate the cell value(s) in the 2D **Table** between all highlighted cells. The **Smooth Cells Modifier Button** is an effective way to quickly change the profile of **Table** window's 2D Table. For example, if you want to interpolate between all (12) highlighted cell values, you use the **Smooth Cells Modifier Button**. You do so by first highlighting the (12, 3 rows x 4 column) cells in the 2D table and then select the **Smooth Cells Modifier Button** using the left mouse key. Once the **Smooth Cells Modifier Button** is selected, the cell values in (12 of the 12) highlighted cells, will be interpolated evenly between one another and the (12) new "interpolated" cell values will appear in the 2D **Table** window.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

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15. HOW TO NAVIGATE & CONFIGURE PARAMETER WINDOWS

[Back to Table of Contents](#)



A **Parameter** window can be easily identified as having a number of configuration parameters arranged in a tabular format that can be adjusted using up/down arrow dialogue windows or selected using radio buttons. A **Hardware Configuration Parameter** window as shown below will be used this example. All BigComm Pro **Parameter** windows can be navigated, configured, edited and saved (Burn) in the same way.

The screenshot shows the 'Hardware Configuration' window with the following sections and controls:

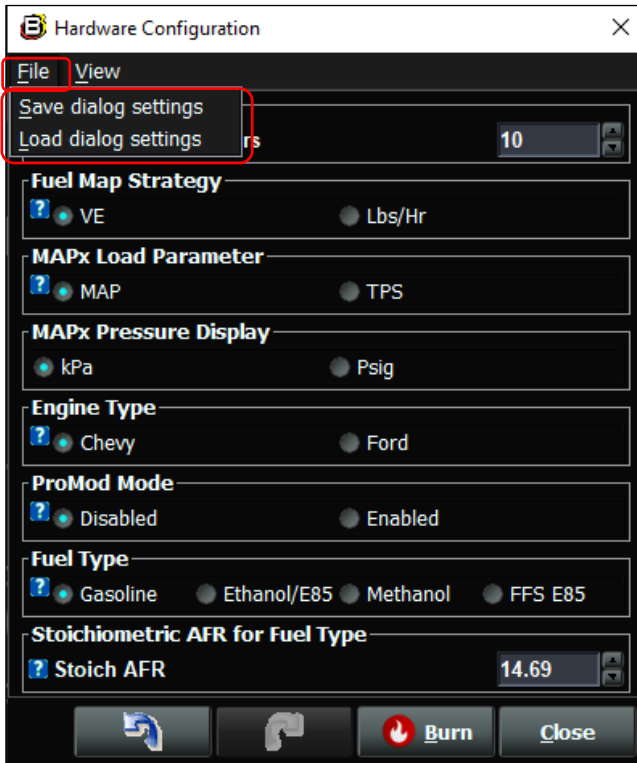
- Engine Topology**: Number of Cylinders (8) with up/down arrow controls.
- Fuel Map Strategy**: Radio buttons for VE (selected) and Lbs/Hr.
- MAPx Load Parameter**: Radio buttons for MAP (selected) and TPS.
- MAPx Pressure Display**: Radio buttons for kPa (selected) and Psig.
- Engine Type**: Radio buttons for Chevy (selected) and Ford.
- ProMod Mode**: Radio buttons for Disabled (selected) and Enabled.
- Fuel Type**: Radio buttons for Gasoline (selected), Ethanol/E85, Methanol, and FFS E85.
- Stoichiometric AFR for Fuel Type**: Stoich AFR (14.69) with up/down arrow controls.

Callouts provide additional information:

- Parameter window name**: Points to the window title bar.
- Up/Down arrow dialogue windows used to adjust configuration parameter values**: Points to the arrow controls on the 'Number of Cylinders' and 'Stoich AFR' fields.
- Configuration Parameters to be adjusted or selected**: Points to the main content area of the window.
- Radio buttons used to select configuration parameter options.**: Points to the radio buttons in the 'Fuel Map Strategy', 'MAPx Load Parameter', 'MAPx Pressure Display', 'Engine Type', 'ProMod Mode', and 'Fuel Type' sections.
- Parameter window Undo, Redo, Burn & Close Tool Bar**: Points to the bottom toolbar containing Undo, Redo, Burn, and Close buttons.

Let's take a closer look at how to navigate & configure **Parameter** window changes by understanding the features of the **Parameter** window GUI. The balance of the **Parameter** window GUI features are detailed below.

File: By selecting the **File** pulldown menu, using the left mouse key, you can **Save** or **Load** individual Parameter configurations as shown below. This can be done offline or online when working in a Project.

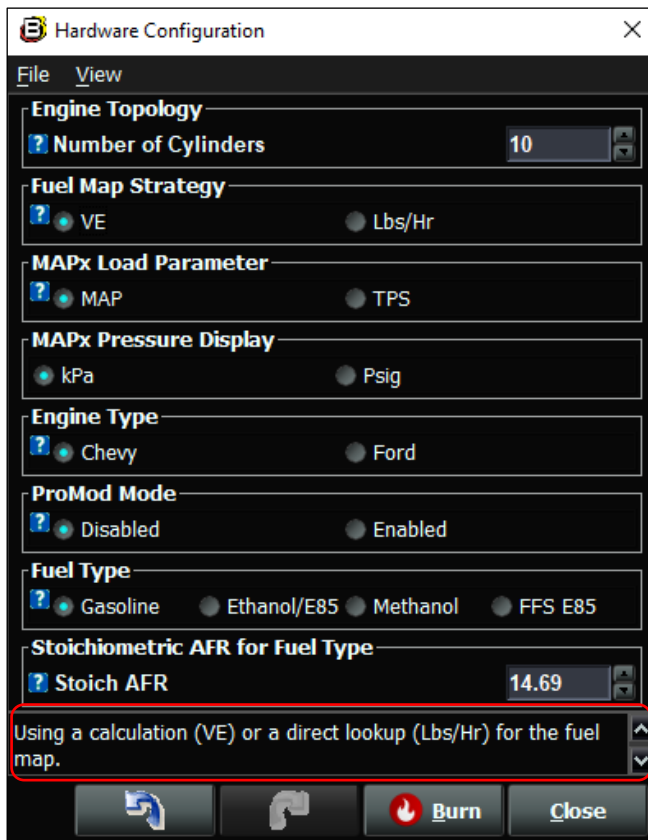



View: By selecting the **View** pulldown menu, using the left-mouse key, you can enable and disable the **Lower Help Pane** which will be displayed above the **Undo, Redo, Burn & Close Tool Bar** as shown below. This can be done offline or online when working in a Project.

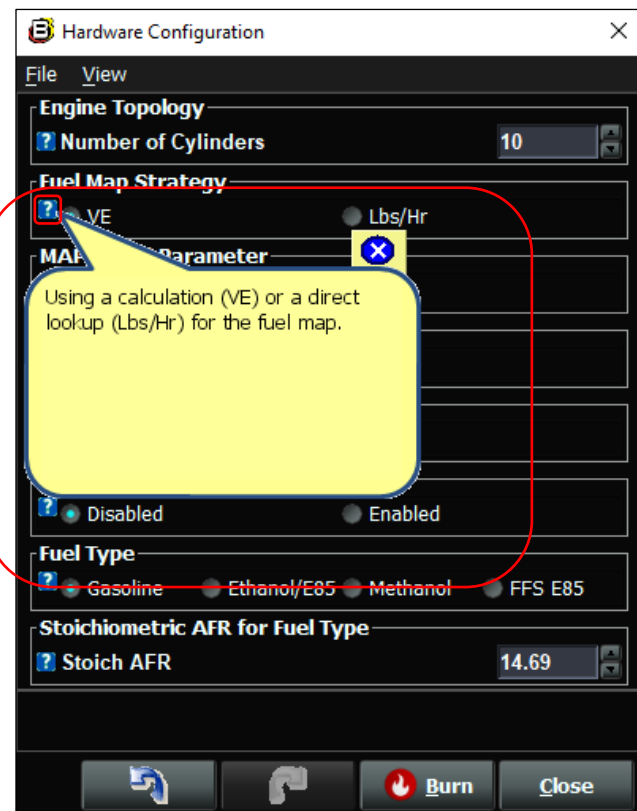
Hardware Configuration Parameter window with Lower Help Pane disabled



Hardware Configuration Parameter window with Lower Help Pane enabled



 By selecting the “**Blue box with white Question Mark**” icons, adjacent to each of the **Parameter** window configuration parameters, a yellow dialogue box will open to show specific details about the particular parameter as shown below. Once opened, you can click on the **Blue X** to close the yellow dialogue box.



16. HOW TO EDIT AND SAVE PARAMETER WINDOWS

[Back to Table of Contents](#)

We will now focus on how to Edit and Save (Burn) **Parameter** windows by using the up/down arrow dialogue windows or radio buttons to adjust or select each of the parameter values or selection options.

The screenshot shows the 'Hardware Configuration' parameter window. The window title is 'Hardware Configuration' and it has a close button (X) in the top right corner. The window contains several sections of configuration parameters:

- Engine Topology:** 'Number of Cylinders' is set to 8, with up/down arrow buttons for adjustment.
- Fuel Map Strategy:** 'VE' is selected with a radio button, and 'Lbs/Hr' is an option.
- MAPx Load Parameter:** 'MAP' is selected with a radio button, and 'TPS' is an option.
- MAPx Pressure Display:** 'kPa' is selected with a radio button, and 'Psig' is an option.
- Engine Type:** 'Chevy' is selected with a radio button, and 'Ford' is an option.
- ProMod Mode:** 'Disabled' is selected with a radio button, and 'Enabled' is an option.
- Fuel Type:** 'Gasoline' is selected with a radio button, and 'Ethanol/E85', 'Methanol', and 'FFS E85' are other options.
- Stoichiometric AFR for Fuel Type:** 'Stoich AFR' is set to 14.69, with up/down arrow buttons for adjustment.

At the bottom of the window, there is a toolbar with four buttons: 'Undo' (curved arrow), 'Redo' (curved arrow), 'Burn' (flame icon), and 'Close' (X icon).

Callouts in the image provide the following information:


- Parameter window name:** Points to the title bar.
- Up/Down arrow dialogue windows are used to adjust configuration parameter values:** Points to the 'Number of Cylinders' and 'Stoich AFR' input fields.
- Configuration Parameters to be adjusted or selected:** Points to the 'Number of Cylinders' and 'Stoich AFR' fields.
- Radio buttons are used to select configuration parameter options:** Points to the 'VE', 'MAP', 'kPa', 'Chevy', 'Disabled', and 'Gasoline' radio buttons.
- Parameter window Undo, Redo, Burn & Close Tool Bar:** Points to the bottom toolbar.

Before getting started on how to edit and save the **Parameter** windows, below are a couple key notes worth mentioning.

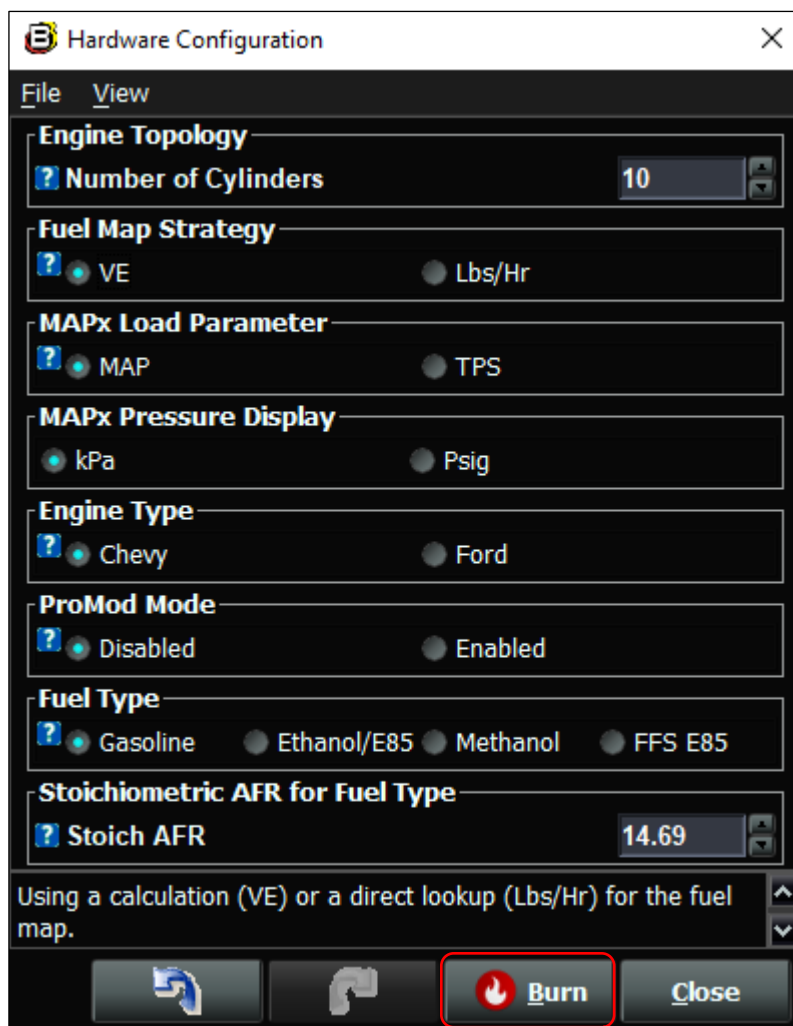
Note: The **Undo** or **Redo** buttons, located in the lower right-hand corner of the screen, can be used to undo or redo the last changes made to the **Parameter** window parameter adjustments or selection options.

Note: The **Close** button, located in the lower right-hand corner of the screen, is used to close out the **Parameter** window screen. **The Curve window edited changes are not saved when the Close button is selected. Edited changes are only permanently saved when the Burn button is selected!**

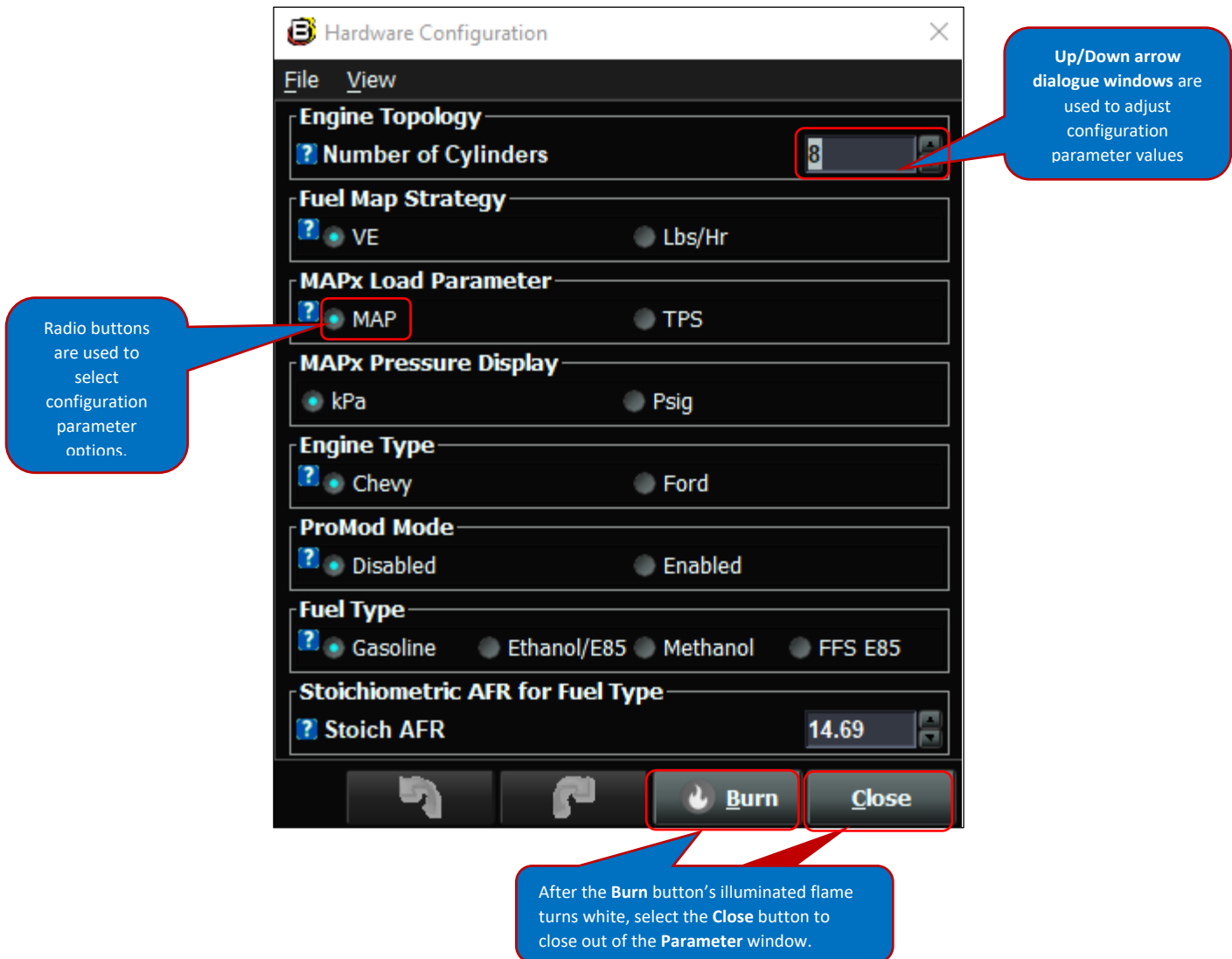
There are a couple of very important things to note at this point;

The first is, as soon as you select and change any of the **Parameter** window parameter adjustments or selection options, you will see the flame icon in the **Burn**  button, located in the lower right-hand corner of the screen, will illuminate red, as shown below, to indicate the BigComm Pro software is anticipating a change to take place. **You must left-mouse click on the illuminated red flame Burn button after making any changes to Parameter window parameter adjustments or selection options in order to permanently save the edited changes. If the illuminated red flamed Burn button is not left-mouse clicked on, the edited changes will not be saved!**

The second is, **after left-mouse clicking on the Burn button, the illuminated red flame icon in the Burn button will illuminate back to white, to indicate the edited changes have been permanently saved** as shown below.







Burn button with red illuminated flame must be selected to permanently save Parameter window parameter adjustments or selection options.



There are several ways to edit the **Parameter** window parameter values or selection options using the **up/down arrow dialogue windows** or **radio buttons**. A description on how to use each is detailed below.

The **up/down arrow dialogue windows** are used to adjust the **Parameter** window configuration parameter values. You do so by highlighting the parameter value in the **up/down arrow dialogue window**, using the left-mouse key. Once highlighted, you can type in the value (i.e. number) or use the up and down arrows to obtain the value (i.e. number) as shown above. Repeat this to adjust the balance of the **Parameter** window configuration parameter values.

The **radio buttons** are used to select the **Parameter** window configuration options. You do so by selecting the **radio button**, using the left-mouse key, for the desired configuration parameter option you want. Once selected, a blue circle will illuminate within the radio button, to indicate the configuration parameter option has been selected as shown above. Repeat this to select the balance of the **Parameter** window parameter selection options.

Don't forget as you make your changes, you can use the Back-Arrow **Undo**  button or Forward-Arrow **Redo**  button, located in the lower right-hand corner of the screen, to undo or redo the last changes made to the **Curve** window data point values. Also, don't forget to select the **Burn**  button, using the left mouse key, when you are done editing the Curve window data point values to permanently save the changes. **The Curve window edited changes are not saved when the Close  button is selected. The Close button is only used to "close" out of the Curve window screen. Edited changes are only permanently saved when the Burn button is selected!**

Note: If at any point you close out of the **Parameter** window, the Back-Arrow **Undo** or Forward-Arrow **Redo** buttons will go grey indicating you cannot go back or forward. This is because the BigComm Pro software only keeps track of the edited changes while the **Parameter** window screen is open.

This completes the instructions on how to navigate, configure, edit and save **Curve, Table** and **Parameter** windows. The next section of the instruction will explain how to use the **BigComm Pro Configuration & Calibration Tool Bar** menus and submenus to configure and calibrate each portion of the overall Project, such as System, Fuel, Spark, Air Fuel Ratio, etc. The **BigComm Pro Configuration & Calibration Tool Bar** menus and submenus consist of **Curve, Table** and **Parameter** windows, so it's important to know how to effectively navigate, configure, edit and save the **Curve, Table** and **Parameter** windows prior to configuring and calibrating each portion of the overall Project.

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17. HOW TO BEGIN TO USE THE BIGCOMM PRO CONFIGURATION & CALIBRATION TOOL BAR MENUS AND SUBMENUS TO CONFIGURE AND CALIBRATE PROJECT

[Back to Table of Contents](#)

0 Engine Speed (RPM)	10.3 Manifold Pressure (kPa)	0.0 Throttle (%)	-3.8 Coolant (°F)	-3.8 IAT (°F)	13.6 Battery (Volts)	0 Vehicle Speed (MPH)
1.02 LB Lambda (Secondary)	1.02 RB Lambda (Primary)	15.0 Spark Advance (°)	50.0 Coolant Correction (%)	0.0 After Start Correction (%)	0.0 ES_PVF Correction (%)	0.00 X axis Acceleration (G's)
0.0 LB Lambda Correction (%)	0.0 RB Lambda Correction (%)	0 IAC Position (Steps)	0.0 Fuel Pressure (psig)	0.0 Duty Cycle (%)	0.0 PVF Correction (%)	0.02 Y axis Acceleration (G's)
-12.6 Boost (psig)	0.85 Target Lambda	1 Gear	0.0 Oil Pressure (psig)	0.96 Gross PW Ave (ms)	0.0 AAE_PW (ms)	1.03 Z axis Acceleration (G's)
97.2 Baro (kPa)	4 FSL Tbl Index	0 Engine State	0 Ethanol (%)	0 Total Engine Fuel Flow (#/hr)	-26.9 Pan Vacuum (in Hg)	0.0 Turbo Back Pressure (psig)


The **BigComm Pro Configuration & Calibration Tool Bar** incorporates the menus and submenus, consisting of **Curve**, **Table** and **Parameter** windows, to allow you to configure and calibrate each portion of the overall Project, such as System, Fuel, Spark, Air Fuel Ratio, etc.


The **BigComm Pro Configuration & Calibration Tool Bar** has been purposely laid out, such that for an initial Project configuration and calibration, you work from left to right to sequence through each of the individual configuration and calibration menus and submenus i.e. **Systems** first, **Fuel Settings** second, **Start Up / Idle** third, etc.

Subsequent to the initial Project configuration and calibration, the **BigComm Pro Configuration & Calibration Tool Bar** menus and submenus can be randomly selected to continue to refine the Project's configurations and calibrations.


Key BigComm Pro Ground Rules

Before getting into how to use the **BigComm Pro Configuration and Calibration Tool Bar** menus and submenus to configure and calibrate each portion of the overall **Project**, let's review several key ground rules:

(1) When working inside any of the Configuration and Calibration Tool Bar menus and submenus, the configuration and calibration changes need to be “burned” into the ECU to permanently save the changes when you are done making changes. The **Burn** button  is located in the lower right-hand corner of every Curve, Table and Parameter window. Selecting the **Burn** button, using the left-mouse key, ensures the changes you make will be permanently saved to the ECU. Every time you hit the **Burn** button, the BigComm Pro software saves the entire project to the ECU. This ensures that if at any point you forget to hit the burn button, when configuring and calibrating each portion of the overall Project, the entire Project configuration will be saved to the ECU.

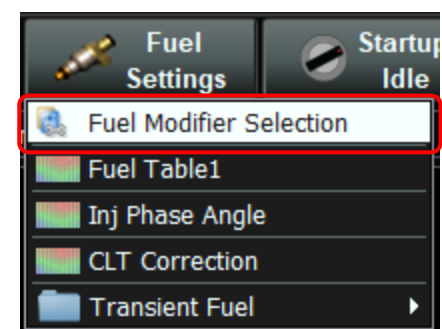
(2) Under the **System**  menu, in order to complete certain ECU parameter configurations changes, the ignition switch needs to go through an **on - 60 second off - on** key cycle when connected to the GEN 4 PRO XTREME ECU for the changes to take effect. The two **System** submenus requiring this are **Generic Port Editor** and **Hardware Configuration**. Failure to switch the ignition off for up to 30 seconds will prevent the changes to take effect.

(3) What's displayed in the **Configuration & Calibration Tool Bar** submenus, depends on which options have been enabled.

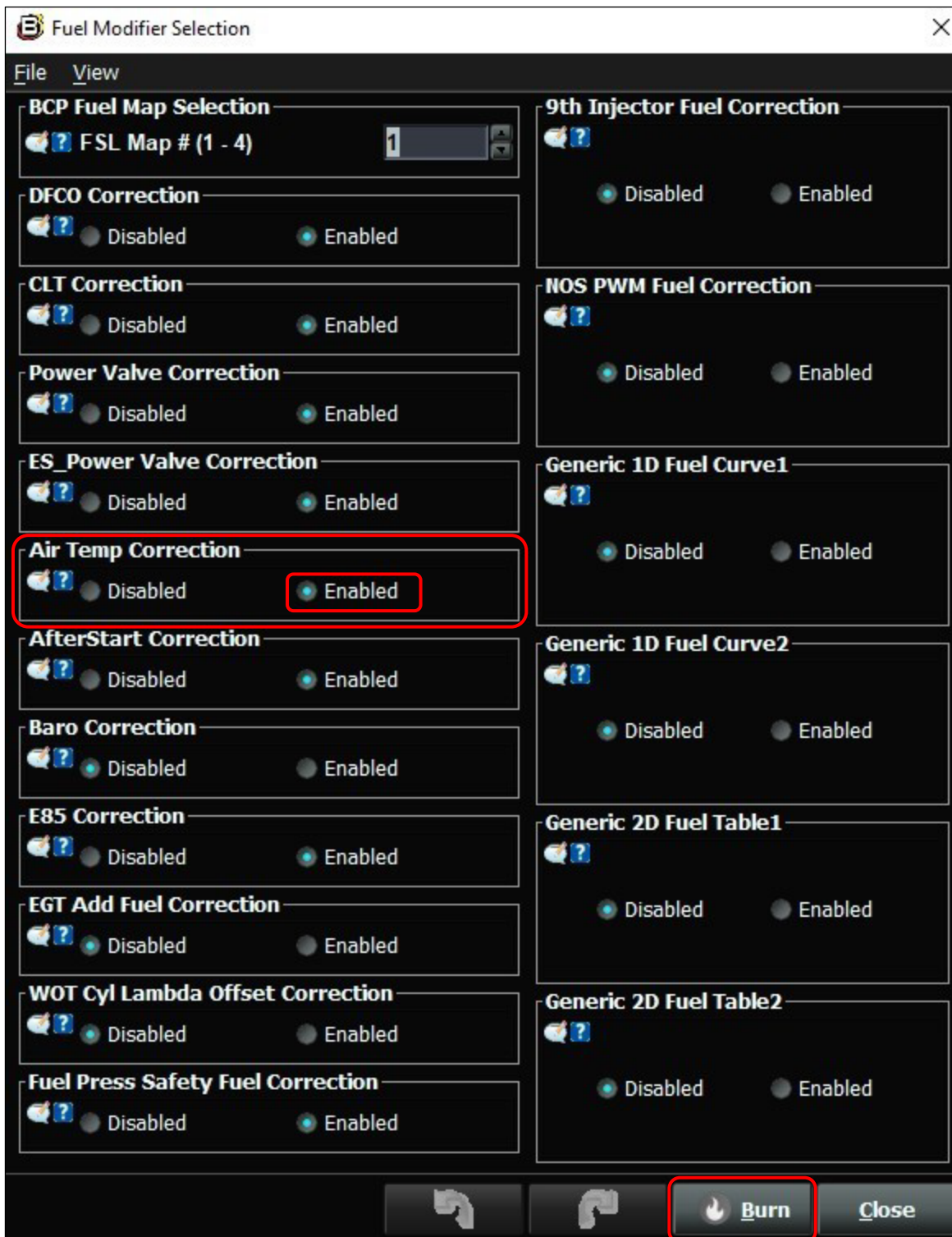
 For example, when initially selecting the **Fuel Settings** menu you may only see the following options listed in the submenu:




Now let's say you want to enable **Intake Air Temperature Correction** for your combination. In order to do so, you need to go to the **Fuel Settings** menu and highlight and select **Fuel Modifier Selection**, using the left mouse key as shown below.

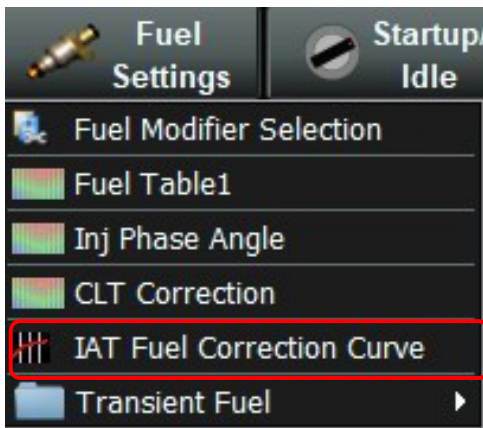


Once **Fuel Modifier Selection** is selected, the **Fuel Modifier Selection** configuration window will open as shown below. Once opened, the **Air Temp Correction** needs to be enabled by selecting the **Enabled** button in the **Air Temperature Correction** dialogue window and then clicking on the **Burn** button.



The **Air Temperature Correction** will now be displayed as a submenu in the new **Fuel Settings**

 menu as shown below.



The procedure detailed above is how to add any available modifier table submenu into the **BigComm Pro Configuration and Calibration Tool Bar** menus.

Now we are ready to get into how to use the **BigComm Pro Configuration and Calibration Tool Bar** menus and submenus to configure and calibrate each portion of the overall **Project**.

It is important to remember, the **BigComm Pro Configuration & Calibration Tool Bar** has been purposely laid out, such that for an initial Project configuration and calibration, you work from left to right to sequence thru each of the individual **BigComm Pro Configuration and Calibration Tool Bar** menus and submenus i.e. **Systems** first, **Fuel Settings** second, **Start Up / Idle** third, etc.

34. FREQUENTLY ASKED QUESTIONS

- **What does working “On line” vs. “Off line” mean?**

-Working “Off-line” = The BigStuff3 ECU is not powered up (PC Only). Working “On-line” = The BigStuff3 ECU is powered on, the communication is connected between the GEN4 ECU and a PC, and the two are communicating with each other

- **Should I use the camshaft position input (cam sync) with my distributor based GEN4 system?**

-Without the camshaft position input (cam input connector in the main wire harness) hooked up, the GEN4 system still provides sequential fuel injection and individual fuel control per cylinder, but injector phasing (where the fuel is injected) and individual spark control will not function.

- **How can the GEN4 system provide sequential fuel injection and individual fuel control per cylinder without the cam camshaft position input hooked up?**

-When the engine starts cranking over, the GEN4 ECU begins firing the injector drivers, assigned to each injector, in the firing order inputted into the software. What the GEN3 system cannot do

without the cam camshaft position input hooked up is to determine where to inject fuel (the position in crankshaft degrees, relative to TDC, for each cylinder).

• **At what injector duty cycle % are my injectors considered out of control, or static?**

-Loss of injector control does not occur at 100% duty cycle, but at approximately 85% duty cycle. At 85% duty cycle the injectors are most likely not opening and closing in a controlled fashion.

-This condition is termed “static” (vs. dynamic) control. An example why this condition is undesirable is if the GEN4 ECU demands more fuel (demanding a larger pulse width) and the injector is already static. The only way to move more fuel through the injector would be to increase the fuel pressure. Increasing the fuel pressure at the 1/8th mile marker is not possible, so things go bad quickly.

-Also, teetering on and off at the static point is also undesirable. Lastly, running the injectors drivers static for long periods of time can damage them.

• **How do I set up my ignition system with the GEN4 system?**

-For more information on ignition system setups, beyond what is available in this manual, go to the How To/Help section on the BigStuff3 website, and then Ignition System Setup Tutorial. The link is: <http://bigstuff3.com/pdf/Ignition%20Guide%20rev%201.2.pdf>. There are nine (9) ignition system setups outlined. There is also information on the setting up the Ford TFI, GM HEI, GM Opti-spark & MSD8 ignition systems in the How To/Help section of the website.

• **Where can I find wiring harness information on the BS3 power-train system and optional systems?**

-Information on most of our wiring harnesses is available on our website at www.bigstuff3.com. -
-Go to the How To/Help section on the website. The first fourteen (14) files listed in this section are wiring diagrams. The link is: <http://bigstuff3.com/gen4/>

• **My engine will not start. What should I check?**

-Make sure the harness side header connectors, interfacing with the GEN4 ECU, are attached and tightened to no more than 15 – 20 inch lbs.

-Make sure the battery voltage is at, or above, 12V during cranking. Low battery voltage conditions must be fixed before trying to start the engine. Battery voltage (especially during cranking) is even more important with coil-on-plug applications.

Make sure you can see an RPM signal in the Dash. While turning the engine over, you should see at least 100 – 150 RPM. If no RPM signal is present, check that the crank input (crank trigger or distributor) signal wire is connected to the red wire in the BS3 “Crank” connector. Swap the 2 wires and try again.

-For distributor ignition based applications, make sure the BS3 points wire is connected to the ignition system points input terminal/wire. Applying 12V directly to the BS3 points wire will

immediately damage the GEN4 ECU!!

-For COP engines (LSx and other standalone COP engine) the cam input cannot occur at the same time as the crank input!!! If this is the case, the engine will not start. The cam synch pulse must occur before a crank pulse. Ideally, 10* before the crank pulse.

-For more information on ignition system setups, go to the How To/Help section on the BS3 website, then to Ignition System Setup Tutorial.

-With all coil-on-plug engines, make sure the coil ground eyelet is securely fastened to the cylinder head or engine block. No other grounds locations should be used.

-The ECU may be in Clear flood Mode. Make sure the TPS sensor reads near 1-2% when the throttle is closed and near 100% when fully opened. If it reads near 100% when closed, the ECU is in clear flood mode and is not injecting fuel. Swap TPS pins A & C in the TPS connector. Make sure the crank sensor is connected.

-The LS1 Cam sensor connections are: **• A – Signal • B – Ground • C – 12V •**

The LS2 cam sensor connections must be (terminals A & C are swapped): **• A – 12V • B – Ground • C – Signal**

• My engine timing does seem right, what should I check.

-Make sure the firing order is correct.

-Both the BS3 GEN4 main wiring harness and the MSD ignition system must be connected directly to the battery!! If not, ground loop issues are likely to occur.

-Make sure your pulses per rev in the Operating Configuration table is correct for your application. For example, a four (4) magnet MSD crank trigger setup should have a value of 4.

• I can't get my LSx engine started.

-I'm using an LS2 sensor in the front of the engine.

-Swap pins A & C in the cam input connector around. My TPS sensor reads 100% when the throttle is closed and 0% when the throttle is fully opened. Swap the wires A & C in the TPS connector. The engine may not start since the ECU senses that the Clear flood Mode has been invoked

• If I am tuning in Alpha/N mode (Hardware Configuration, then Control Algorithm) can I use my 1 Bar MAP sensor for barometric compensation?

-Yes, the automatic barometric compensation is hard-coded in the ECU. Leave the MAP sensor vacuum port exposed to the atmosphere. Do not plug the MAP vacuum port to the intake manifold.

• What do I need to do to make sure my 3 step works correctly?

-A clean 12VDC must be applied to Header 2 W1 meaning a relay with only 12vdc. Do not use the same 12VDC feeding the transbrake solenoid as flyback voltage from the transbrake releasing can damage the ECU!

-Confirm the 3 Step settings in the System Menu / RevLimiters are configured correctly. The TPS% On threshold must be higher than the Off threshold.

• **I do not think my injectors are pulsing. What can I check?**

Make sure the BS3 and MSD systems are grounded directly to the battery.

Plug a “noid” light into each injector position in the injector wire harness. Turn the engine over and see if the light pulses for each injector location.

• **I do not think my COP coils are firing. What can I check?**

Make sure the BS3 main wire harness ground is wired directly to the battery.

Make sure the coil ground wire is grounded to the engine block or cylinder head. No other ground location will work!

• **Can I use a 5 Bar MAP sensor?** Yes, choose 5 Bar MAP sensor in the System Menu / Pressure and Sensor Configuration section. Be sure to cycle the 12VDC ignition on the ECU and you will need to recalibrate the fuel/afr/spark tables on this or any MAP sensor change.

- Note: The 4 BAR MAP sensor sold by BigStuff3 is good to 52 PSI.

• **How do I know if my Bosch WBO2 sensor is bad?**

First make sure the sensor to main wire harness connection is good.

Add the UEGOR signal to the Dash. Turn the ignition on. The UEGOR value should count down from 255 to a value close to 80. If it does not the heater is bad. The sensor should also read 15.9 in the open air. Also, if the O2 sensor is stuck at 14.7 for gasoline, the sensor is not connected or it's defective.

• **How can I check if my NTK WBO2 Methanol sensor is working?**

First check the control circuitry by disconnecting the sensor from the harness. Turn the ignition to the BS3 ECU on. The AFR value in the Dash should read 6.4. Key off and reattach the sensor to the harness. Turn the ignition to the BS3 ECU back on. The sensor should read 6.9. Also, check your last Replay. The ECM Valid should read “On” to indicate the sensor is working. Always wire you the NTK WBO2 on a separate supply switch and always turn the sensor on after the engine is started.

• **What caused my O2 sensor to fail?**

Being dropped

Running leaded fuel

Running rich at idle

• **Can BS3 activate a transmission air shifter?**

• **Does the GEN4 ECU offer an auto-shift feature?**

Yes, BigStuff3 offers an optional transmission auto-shift feature. The system will shift up to five (5) speeds with independent shift RPM and Hysteresis points. Once the system is configured for the auto-shift feature, a wire from ECU Header 2 location, P2 must be run to the ground side of the relay.

• **What dwell times should be used with the LS1 coils sold with my system?**



With a 12V charging system from idle to approximately 4,000 RPM use about 3.0 milliseconds near idle and no more than about 4.0 milliseconds at approximately 4,000 RPM. From approximately 4,100 - Max RPM use no more than about 6 milliseconds of total dwell time at max RPM. With a 16V charging system from idle to approximately 4,000 RPM use about 2.0 milliseconds near idle and no more than about 3.0 milliseconds at approximately 4,000 RPM. From approximately 4,100 - Max RPM use no more than about 4.5 milliseconds of total dwell time at max RPM.

35. DATALOGGER ACRONYMS

[Back to Table of Contents](#)

Point Definitions are displayed in alphabetical order and are the same for either laptop based datalogging or pulling the data from the on board SD card.

A

AC_BUMP_ON – Air Conditioning Engine RPM increase active condition

ACCEL_X – Accelerometer X Axis

ACCEL_Y – Accelerometer Y Axis

ACCEL_Z – Accelerometer Z Axis

ACCEL_ENG – Acceleration Engine value

ACT_IAC_POS – Current Idle Air Control Motor Position

AFR_TARGET – Air Fuel Ratio Target

AFR_L_BANK – Air Fuel Ratio Left Bank

AFR_R_BANK – Air Fuel Ratio Right Bank

AFR_CYL_1 – Air Fuel Ratio Cylinder 1

AFR_CYL_2 – Air Fuel Ratio Cylinder 2

AFR_CYL_3 – Air Fuel Ratio Cylinder 3

AFR_CYL_4 – Air Fuel Ratio Cylinder 4

AFR_CYL_5 – Air Fuel Ratio Cylinder 5

AFR_CYL_6 – Air Fuel Ratio Cylinder 6

AFR_CYL_7 – Air Fuel Ratio Cylinder 7

AFR_CYL_8 – Air Fuel Ratio Cylinder 8

B

BARO – Outside Barometric Pressure

BATTERY_VOLTAGE – Battery voltage

BC_SENSOR_ERROR – Boost Controller Sensor Input Error

BOOST_PSI – Intake Manifold Pressure

BOOST_CL_DC – GN Boost Controller Duty Cycle Output %

Boost_Inc PIDTerm – GN Boost Controller PID Increase %

C

CLT – Coolant Temperature
CORR_AIR – Fuel Percentage Air Temperature Correction
CORR_AFTST – Afterstart Fuel Percentage Correction
CORR_BARO – Barometric Fuel Percentage Correction
CORR_CLT – Coolant Warm Up Temperature Fuel Percentage Correction
CORR_E85 – E85 Fuel Percentage Correction
CORR_ES_PVFC – Extended Source Power Valve Fuel Correction Percentage
CORR_FP_COMP – Fuel Pressure Correction
CORR_PVF – Power Valve Fuel Correction
CORR_SLT – Start Line Fuel Percentage Correction

D

DAE_INPUT – DAE 12vdc Input true or false
DSRD_BOOST_MAP – Desired Boost Map
DSRD_SR2_MAP – Desired SR2 Map
DUTY_CYCLE_BOOST_INC – Boost Controller Duty Cycle Output Increase %
DUTY_CYCLE_BOOST_DEC – Boost Controller Duty Cycle Output Decrease %
DUTY_CYCLE_PWM07 – Duty Cycle Output Pulse Width Modulation 07
DUTY_CYCLE_PWM08 – Duty Cycle Output Pulse Width Modulation 08
DUTY_CYCLE_PWM09 – Duty Cycle Output Pulse Width Modulation 09
DUTY_CYCLE_NOS_PRG – Progressive Nitrous Duty Cycle Control Output Percentage
DUTY_CYCLE_CYL1 – Fuel Injector Duty Cycle Percentage Cylinder 1
DUTY_CYCLE_CYL2 – Fuel Injector Duty Cycle Percentage Cylinder 2
DUTY_CYCLE_CYL3 – Fuel Injector Duty Cycle Percentage Cylinder 3
DUTY_CYCLE_CYL4 – Fuel Injector Duty Cycle Percentage Cylinder 4
DUTY_CYCLE_CYL5 – Fuel Injector Duty Cycle Percentage Cylinder 5
DUTY_CYCLE_CYL6 – Fuel Injector Duty Cycle Percentage Cylinder 6
DUTY_CYCLE_CYL7 – Fuel Injector Duty Cycle Percentage Cylinder 7
DUTY_CYCLE_CYL8 – Fuel Injector Duty Cycle Percentage Cylinder 8
DUTY_CYCLE_FRCMTR – Duty Cycle Force Motor Output Percentage (Used with 4L60E/80E)
DUTY_CYCLE_TCC – Duty Cycle Torque Converter Clutch Output (Used with 4L60E/80E)
DWELL_TIME – Ignition Coil Dwell Time

E

E85_SPARK_OFFSET – E85 Spark Offset
ECM_RB_EC – NTK O2 Sensor Right Bank Error Code
ECU_SYNC – Current ECU Synchronization Status
EGT_CYL1 – Exhaust Gas Temperature Cylinder 1
EGT_CYL2 – Exhaust Gas Temperature Cylinder 2

EGT_CYL3 – Exhaust Gas Temperature Cylinder 3
EGT_CYL4 – Exhaust Gas Temperature Cylinder 4
EGT_CYL5 – Exhaust Gas Temperature Cylinder 5
EGT_CYL6 – Exhaust Gas Temperature Cylinder 6
EGT_CYL7 – Exhaust Gas Temperature Cylinder 7
EGT_CYL8 – Exhaust Gas Temperature Cylinder 8
ENG_STATE – Engine State (1-Engine Cranking, 4-Engine Running Steady, 5-Engine Accelerating, 6-Engine Decelerating, 7-Deceleration Fuel Cutoff)
EGT_SHUTDOWN_ACTIVE – Exhaust Gas Temperature Shutdown Active Condition
ETM_TORQ_STG – Engine Torque Management Torque Stage Current Value
ETM_DS_ENG_ERROR – ETM Driveshaft or Engine RPM Error
ETM_DS_ENG_DSIRD – ETM Driveshaft or Engine RPM Desired

F

FP_SENSOR_ERROR – Fuel Pressure Sensor Input Error
FP_WARNING_ACTIVE – Fuel Pressure Warning Active Condition
FSL_TBL_INDEX – Fuel Spark Lambda current map enabled
FUEL_FLOW_CYL1 – Calculated Fuel flow in lbs/hr for Cylinder 1
FUEL_FLOW_CYL2 – Calculated Fuel flow in lbs/hr for Cylinder 2
FUEL_FLOW_CYL3 – Calculated Fuel flow in lbs/hr for Cylinder 3
FUEL_FLOW_CYL4 – Calculated Fuel flow in lbs/hr for Cylinder 4
FUEL_FLOW_CYL5 – Calculated Fuel flow in lbs/hr for Cylinder 5
FUEL_FLOW_CYL6 – Calculated Fuel flow in lbs/hr for Cylinder 6
FUEL_FLOW_CYL7 – Calculated Fuel flow in lbs/hr for Cylinder 7
FUEL_FLOW_CYL8 – Calculated Fuel flow in lbs/hr for Cylinder 8
FUEL_FLOW_TOTAL – Total Calculated Fuel Flow of cylinders 1-8 in lbs/hr

G

GEAR – Current Gear position calculated by engine rpm drop
GEN_BOOST_ADD – Generic Boost Tables Additional Boost Pressure
GEN_FUEL_LBSHR_ADD – Generic Fuel Lbs/hr adder
GEN_FUEL_MULT – Generic Fuel Multiplier Percentage Adder
GEN_LAMBDA_ADD – Generic Lambda Fuel Adder
GEN_LAMBDA_MULT – Generic Lambda Fuel Multiplier
GEN_SPK_ADV_ADD – Generic Spark Advance Adder
GS_ACCEL – Gear Speed Acceleration
GYRO_X – Gyrometer X Axis
GYRO_Y – Gyrometer Y Axis
GYRO_Z – Gyrometer Z Axis

H

HEAD_TEMP_RB – Head Temperature Right Bank. When in Pro Mod Mode located in the System->Hardware Configuration section this sensor is enabled for use. Pro Mod Mode sets the water and air sensors to 100* in the software so that they have no bearing on the overall VE fuel calculation. This is the GM Water Temperature Sensor.

HEAD_TEMP_LB – Head Temperature Left Bank. When in Pro Mod Mode located in the System->Hardware Configuration section this sensor is enabled for use. Pro Mod Mode sets the water and air sensors to 100* in the software so that they have no bearing on the overall VE fuel calculation. This is the GM Air Temperature Sensor.

I

IAT – Intake Air Temperature

ICF_CORR_CYL1 – Individual Cylinder Fuel Percentage Correction Cylinder 1

ICF_CORR_CYL2 – Individual Cylinder Fuel Percentage Correction Cylinder 2

ICF_CORR_CYL3 – Individual Cylinder Fuel Percentage Correction Cylinder 3

ICF_CORR_CYL4 – Individual Cylinder Fuel Percentage Correction Cylinder 4

ICF_CORR_CYL5 – Individual Cylinder Fuel Percentage Correction Cylinder 5

ICF_CORR_CYL6 – Individual Cylinder Fuel Percentage Correction Cylinder 6

ICF_CORR_CYL7 – Individual Cylinder Fuel Percentage Correction Cylinder 7

ICF_CORR_CYL8 – Individual Cylinder Fuel Percentage Correction Cylinder 8

ICS_CORR_CYL1 – Individual Cylinder Spark Correction Cylinder 1

ICS_CORR_CYL2 – Individual Cylinder Spark Correction Cylinder 2

ICS_CORR_CYL3 – Individual Cylinder Spark Correction Cylinder 3

ICS_CORR_CYL4 – Individual Cylinder Spark Correction Cylinder 4

ICS_CORR_CYL5 – Individual Cylinder Spark Correction Cylinder 5

ICS_CORR_CYL6 – Individual Cylinder Spark Correction Cylinder 6

ICS_CORR_CYL7 – Individual Cylinder Spark Correction Cylinder 7

ICS_CORR_CYL8 – Individual Cylinder Spark Correction Cylinder 8

INJ_GPW_AVE – Fuel Injector Gross Pulse Width Average

INJ_PHASE_ANGLE – Fuel Injector Injection Event Phase Angle

IOT – Fuel Injector Opening Tim

L

LAMBDA_CYL1 – Lambda Value Cylinder 1

LAMBDA_CYL2 – Lambda Value Cylinder 2

LAMBDA_CYL3 – Lambda Value Cylinder 3

LAMBDA_CYL4 – Lambda Value Cylinder 4

LAMBDA_CYL5 – Lambda Value Cylinder 5

LAMBDA_CYL6 – Lambda Value Cylinder 6

LAMBDA_CYL7 – Lambda Value Cylinder 7

LAMBDA_CYL8 – Lambda Value Cylinder 8
LAMBDA_L_BANK – Lambda Reading Left Bank
LAMBDA_R_BANK – Lambda Reading Right Bank
LAMBDA_TARGET – Lambda Reading Left Bank
LAMBDA_RB_UA – Lambda Right Bank NTK O2 Error Code
LASER_HEIGHT_AD5 – Laser Height Sensor Reading

M

MAP – Engine Intake Manifold Pressure
MPH – Miles Per Hour

N

NERNST_CYL1 – Resistance value of the Cylinder 1 Bosch O2 sensor. Normal value is around 300. **NERNST_CYL2** – Resistance value of the Cylinder 2 Bosch O2 sensor. Normal value is around 300.
NERNST_CYL3 – Resistance value of the Cylinder 3 Bosch O2 sensor. Normal value is around 300.
NERNST_CYL4 – Resistance value of the Cylinder 4 Bosch O2 sensor. Normal value is around 300.
NERNST_CYL5 – Resistance value of the Cylinder 5 Bosch O2 sensor. Normal value is around 300.
NERNST_CYL6 – Resistance value of the Cylinder 6 Bosch O2 sensor. Normal value is around 300.
NERNST_CYL7 – Resistance value of the Cylinder 7 Bosch O2 sensor. Normal value is around 300.
NERNST_CYL8 – Resistance value of the Cylinder 8 Bosch O2 sensor. Normal value is around 300.
NOS_STAGE – Current NOS Stage
NOS_BOOST_ENABLE – Nitrous or Boost Enable Arm Switch
NOS_TIMER – When activated is the Nitrous Run Time
NOS_ICS_CORR_CYL1 – Nitrous Individual Cylinder Spark Correction Cylinder 1
NOS_ICS_CORR_CYL2 – Nitrous Individual Cylinder Spark Correction Cylinder 2
NOS_ICS_CORR_CYL3 – Nitrous Individual Cylinder Spark Correction Cylinder 3
NOS_ICS_CORR_CYL4 – Nitrous Individual Cylinder Spark Correction Cylinder 4
NOS_ICS_CORR_CYL5 – Nitrous Individual Cylinder Spark Correction Cylinder 5
NOS_ICS_CORR_CYL6 – Nitrous Individual Cylinder Spark Correction Cylinder 6
NOS_ICS_CORR_CYL7 – Nitrous Individual Cylinder Spark Correction Cylinder 7
NOS_ICS_CORR_CYL8 – Nitrous Individual Cylinder Spark Correction Cylinder 8

O

O2_CORR_CYL1 – Closed Loop O2 AFR Fuel Correction Cylinder 1
O2_CORR_CYL2 – Closed Loop O2 AFR Fuel Correction Cylinder 2
O2_CORR_CYL3 – Closed Loop O2 AFR Fuel Correction Cylinder 3
O2_CORR_CYL4 – Closed Loop O2 AFR Fuel Correction Cylinder 4
O2_CORR_CYL5 – Closed Loop O2 AFR Fuel Correction Cylinder 5
O2_CORR_CYL6 – Closed Loop O2 AFR Fuel Correction Cylinder 6
O2_CORR_CYL7 – Closed Loop O2 AFR Fuel Correction Cylinder 7
O2_CORR_CYL8 – Closed Loop O2 AFR Fuel Correction Cylinder 8
O2_CORR_L_BANK – Closed Loop O2 AFR Fuel Correction Left Bank
O2_CORR_R_BANK – Closed Loop O2 AFR Fuel Correction Right Bank

P

PCT_ETHANOL – Percentage of Ethanol in fuel (Need sensor to read properly)
PEDAL_BIT_MODE – Pedal Bit Mode Current Condition
PCT_TCC_SLIP – Percentage of Torque Converter Clutch Slippage (Used with 4L60E/80E)
PRESS_FUEL – Fuel Pressure Reading
PRESS_OIL – Oil Pressure Reading
PRESS_TURBO – Turbocharger Pressure Reading
PRESS_WG – Wastegate Pressure Reading
PRESS_NOS – Nitrous Pressure Reading
PRESS_PV – Pan Vacuum Reading
PRESS_TL – Transmission Line Pressure Reading
PRESS_DSRD_WG – CO2 Desired Wastegate
PRNDL – Park / Reverse / Neutral / Drive / Low (Used with 4L60E/80E)

R

RACE_FUEL_LBS_HR – NOS Mode Race Fuel Lbs/hr fuel adder
REV_LIMITER – Current condition of any active rev limiters
RPM_ENGINE – Engine RPM
RPM_TSS1_LB – Turbocharger Shaft Speed RPM Left Bank
RPM_TSS2_RB – Turbocharger Shaft Speed RPM Right Bank
RPM_ABS_FW – RPM Front Wheel Speed Sensor
RPM_ABS_RW – RPM Rear Wheel Speed Sensor
RPM_TOSS – RPM Transmission Output Speed Sensor or Driveshaft Sensor
RPM_TISS – RPM Transmission Input Speed Sensor

S

SLT_MODE – Start Line Timing Mode Current Condition



SHOCK_RF_AD7 – Right Front Shock Reading
SHOCK_LF_AD8 – Left Front Shock Reading
SHOCK_RR_AD9 – Right Rear Shock Reading
SHOCK_LR_AD10 – Left Rear Shock Reading
SPK_ADV_BCP – Base Spark Advance
SPK_ADV_CYL1 – Spark Advance Cylinder 1
SPK_ADV_CYL2 – Spark Advance Cylinder 2
SPK_ADV_CYL3 – Spark Advance Cylinder 3
SPK_ADV_CYL4 – Spark Advance Cylinder 4
SPK_ADV_CYL5 – Spark Advance Cylinder 5
SPK_ADV_CYL6 – Spark Advance Cylinder 6
SPK_ADV_CYL7 – Spark Advance Cylinder 7
SPK_ADV_CYL8 – Spark Advance Cylinder 8
SR2_TIMER – Current Race time after the release of the three step
SR2_GEAR1_SPK_OFFSET – SR2 Gear 1 Spark Offset
SR2_DS_SPK_OFFSET – SR2 Driveshaft or Engine Spark Offset
SR2_DS_ERROR – SR2 Driveshaft or Engine RPM Error
SR2_DS_DSRD – SR2 Driveshaft or Engine RPM Desired
SS_SPK_NOS_RTD – Street Strip Nitrous Spark Retard
SS_NOS_FUEL_ADD – Street Strip Nitrous Fuel Adder
SS_NOS_LAMBDA_OFFSET – Street Strip Nitrous Lambda Target Offset

T

TPS – Throttle Position Sensor Percentage
TOT – Transmission Oil Temperature Reading
THREE_STEP_INPUT – Three Step Input 12vdc true or false
THREE_STEP_MODE – Three Step Active Condition
TRANS_GEAR_RATIO – Current Transmission Gear Ratio (Used with 4L60E/80E)
TSD_GEAR1_OFFSET – Touch Screen Dash Gear 1 Offset
TSD_SR2_DS_OFFSET – Touchscreen Dash SR2 Driveshaft or Engine RPM Offset
TSD_ETM_DS_OFFSET – Touchscreen Dash ETM Driveshaft or Engine RPM Offset
TWO_STEP_INPUT – Two Step Input 12vdc true or false
TWO_STEP_ACTIVE – Two Step Active Condition
TWO_STEP_MODE – Two Step Active Condition

V

VE -Volumetric Efficiency number calculated from the base fuel map

W

WHEEL SPIN – Calculated wheel speed based off differential from either the rear wheel speed sensor or driveshaft sensor compared to the front wheel speed sensor.

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