GEN4 PRO XTREME BigComm Pro Ignition Menu User Manual

www.**BigStuff3EFI**.com

HOW TO USE THE BIGCOMM PRO CONFIGURATION & CALIBRATION TOOL BAR IGNITION SETTINGS MENU AND SUBMENU

The **Ignition Settings** menu is used to configure the GEN4 PRO XTREME ECU functionality for all things spark related to your project.

The Ignition Modifiers Selection Settings is where you configure the ignition parameters for your ECU's configuration. It is a mixture of curves, tables, and parameters. When any of these modifiers are selected most will populate under the Ignition Settings Menu unless otherwise directed to go somewhere else in the project.

The ignition settings main menu will display the current spark modifiers that are enabled in your project. If you have an FSL Configuration that has Time or Gear chosen you may see up to 4 Spark Tables.
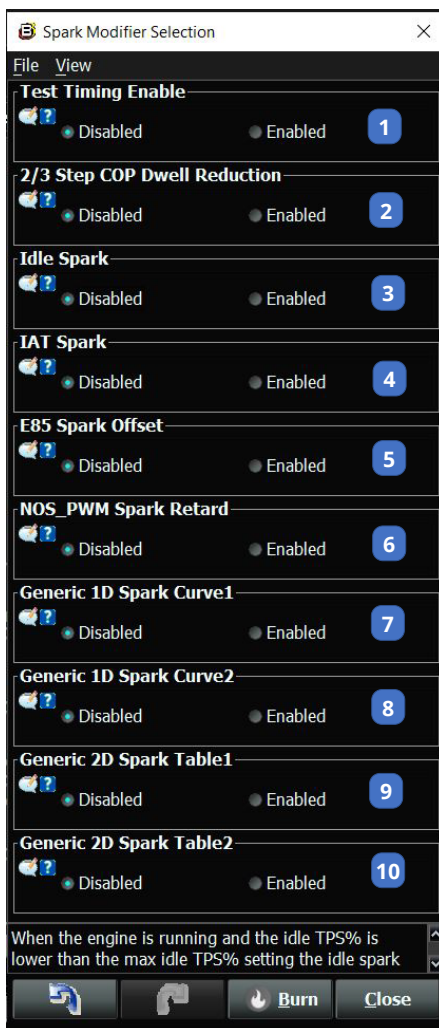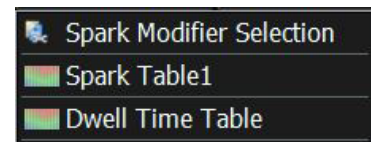
(1) Test Timing Enable – When enabled and the engine is running this will provide a fixed timing value for the initial calibration or timing verification. Be sure to disable when complete to release and let the spark advance move around.
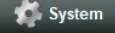
(2) 2/3 Step COP Dwell Reduction – When enabled provides a dwell time reduction. This is useful if when on the rev limiters the ignition is hitting hard you can reduce the amount of charging time to soften the rev limiting effect.
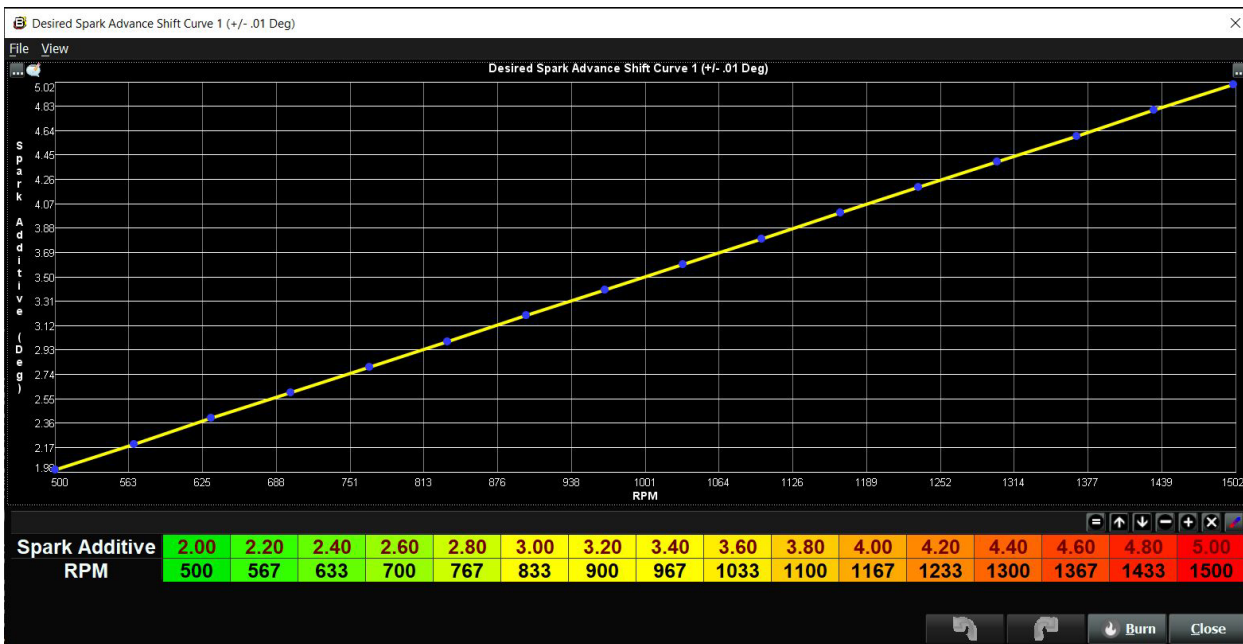
(3) Idle Spark – Idle spark is extremely useful as an idle calibration tool especially when not using an IAC motor. The spark advance can be added or removed up to 13* to raise or lower the engine RPM at idle only. Once the TPS% is below the TPS% Max value the idle spark is allowed to function. The idle spark table will populate under the Ignition Settings Menu when enabled. The idle spark works from the desired engine RPM target and calculates the RPM error. Based on this calculated error whether positive or negative the spark advance will be added or subtracted to achieve the idle rpm target. See **Figure 1** below for an example curve.

(4) IAT Spark – IAT Spark is used when the goal is to add or subtract ignition timing based on the incoming air temperature. See **Figure 2** below for an example curve.

(5) E85 Spark Offset – When enabled and when the E85 option is enabled on the GEN4 ECU, the spark advance can be added based on the amount of E85 being read by the flex fuel sensor. This table will be populated under the E85 Menu when enabled. See **Figure 3** below for an example curve.

(6) NOS_PWM Spark Retard – The NOS option must be enabled for this table to work properly. When enabled this will create a table in the nitrous section allowing you to pull timing over time when the NOS PWM is activated. See figure 3 for an example. See **Figure 4** below for an example.

(7) Generic 1D Spark Curve1 and 2 – When this table is enabled a generic spark curve can be created from the available data points on the X Axis data source pull down menu. For example, if we wanted to make a table that added timing based on engine RPM we would choose RPM as the X Axis data source. When the table is enabled it will populate under the [Generic] Generic Menu / 1D Spark Folder / Generic 1D Spark Curve 1. Then the table would be configured as below to add 2* at 500rpm and up to 5* at 1500rpm. The Generic 1D Spark Curve 1 and Generic 1D Spark Curve 2 are configured the exact same way. For any Generic Table to function properly they must be enabled through the Generic Port Editor. The Generic Port Editor is located under [System] the System Menu.

Spark Additive	2.00	2.20	2.40	2.60	2.80	3.00	3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00
RPM	500	567	633	700	767	833	900	967	1033	1100	1167	1233	1300	1367	1433	1500

(8) Generic 2D Spark Curve 1 and 2 – When this table is enabled a generic 2D spark curve can be created from the available data points on the X Axis and Y Axis data source pull down menus. For example, let's say we wanted to make a 2D table with the X Axis data source engine RPM and the Y Axis Manifold Pressure (MAP KPA) that added timing based on a decrease in manifold vacuum. When the table is enabled, it will populate under the Generic [Generic] Menu / 2D Spark Folder / Generic 2D Spark Curve 1.

The Generic 2D Spark Curve 1 and Generic 2D Spark Curve 2 are configured the exact same way. For any Generic Table to function properly they must be enabled through the Generic Port

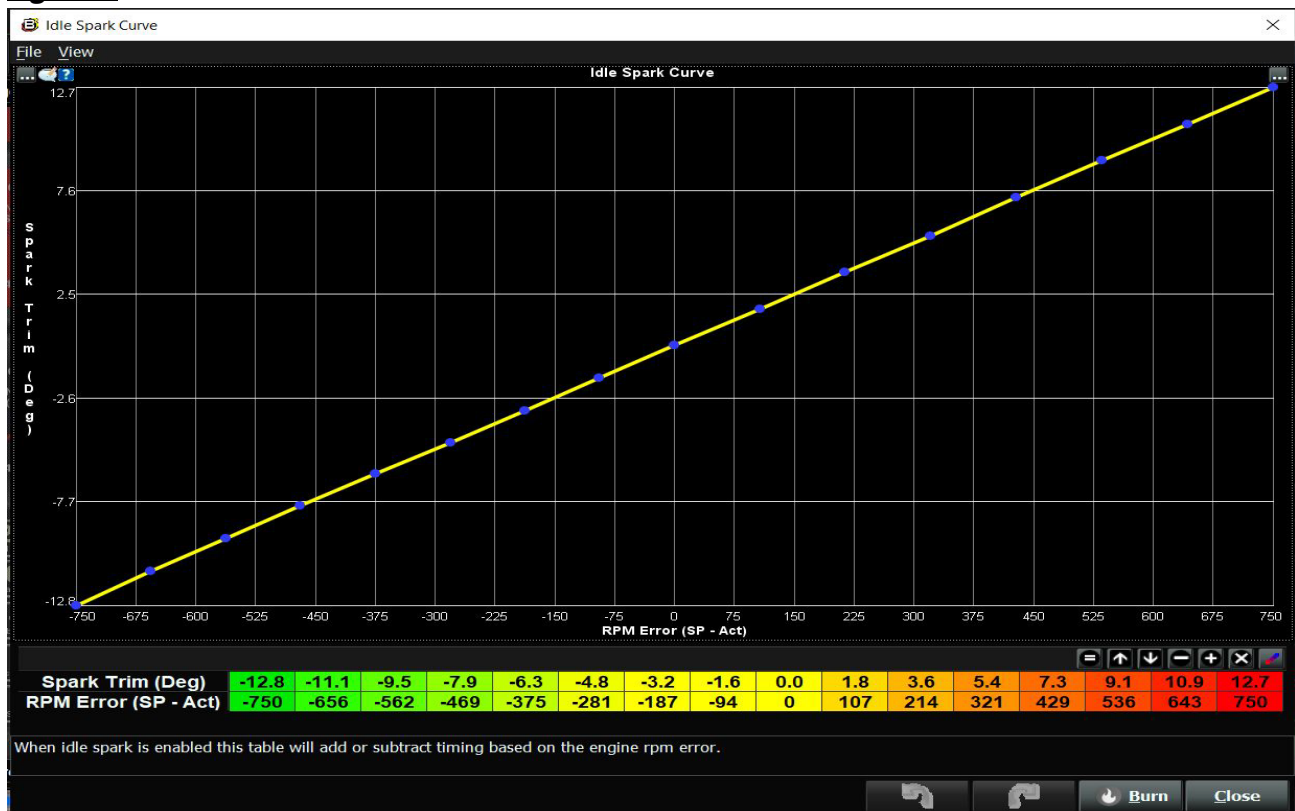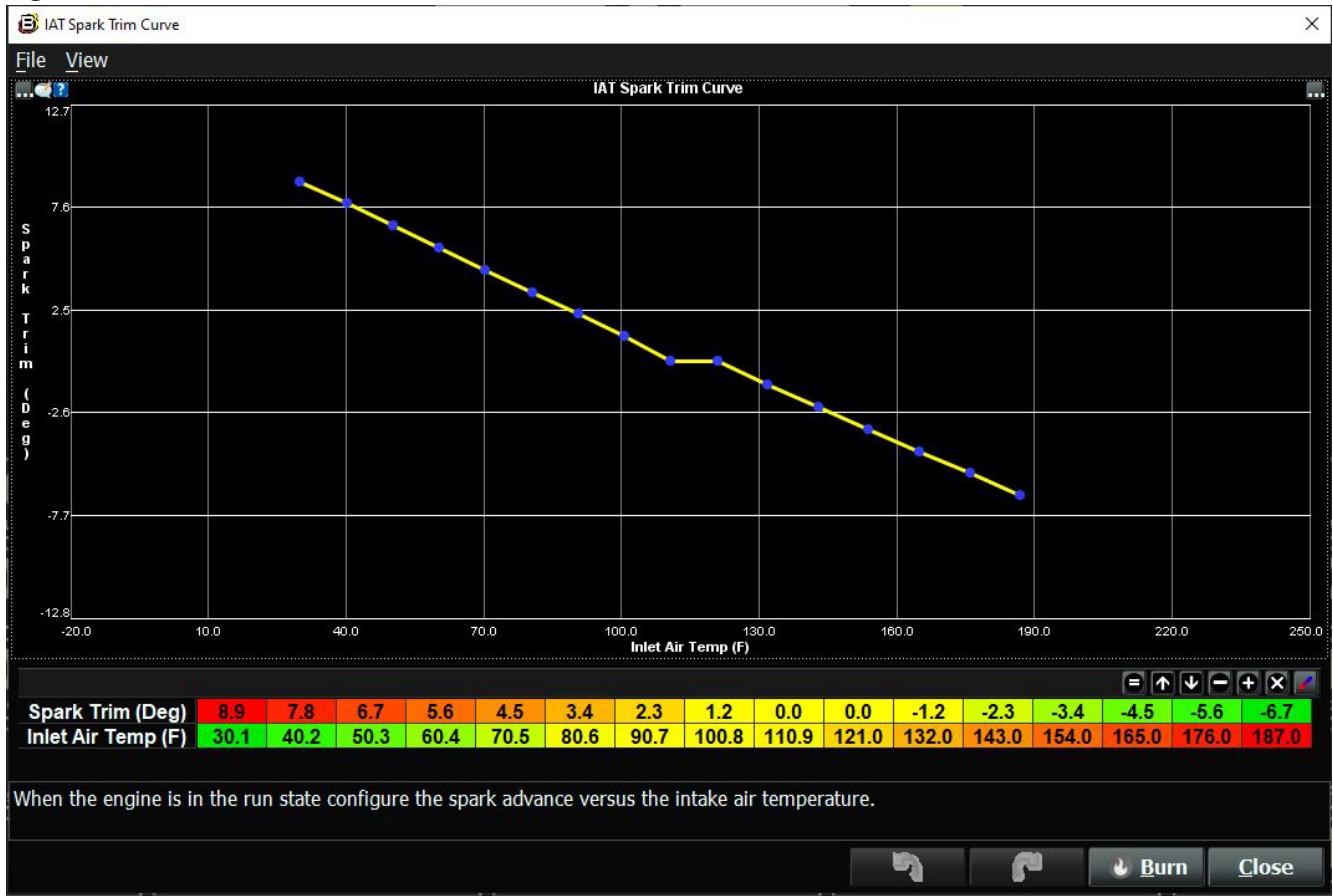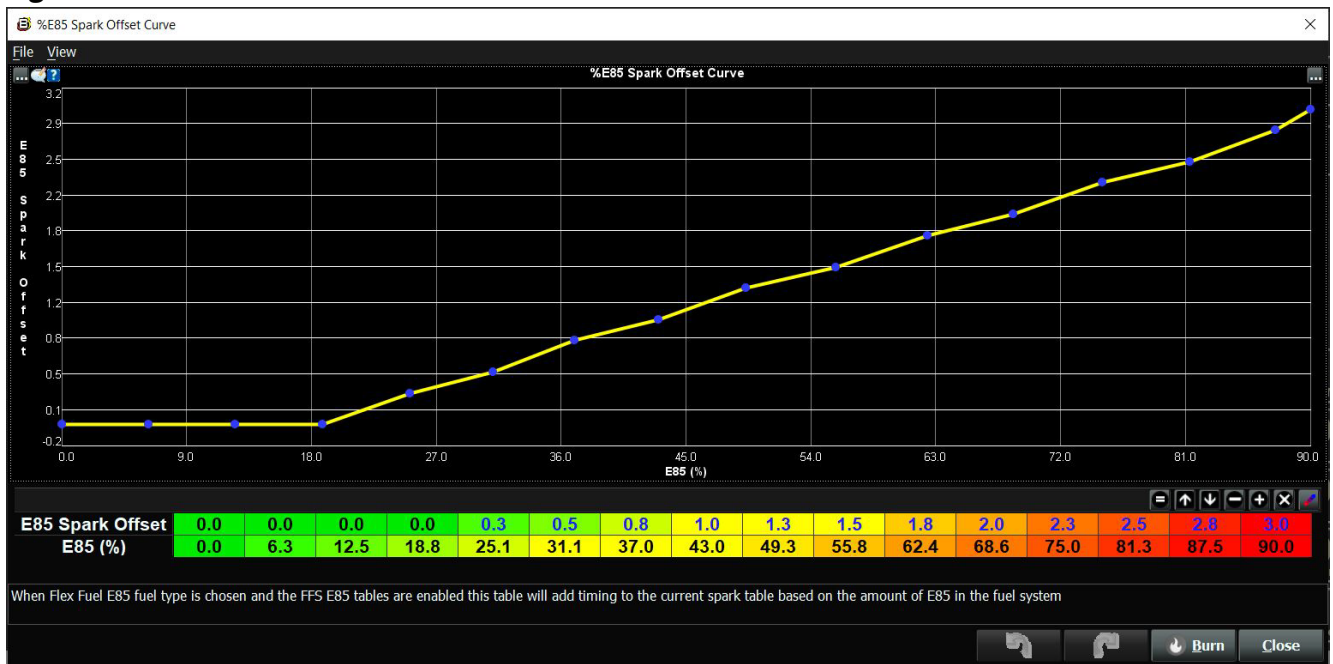Editor. The Generic Port Editor is located under the System Menu.

Figure 1

Figure 2

IAT Spark Trim Curve

Spark Trim (Deg)	8.9	7.8	6.7	5.6	4.5	3.4	2.3	1.2	0.0	0.0	-1.2	-2.3	-3.4	-4.5	-5.6	-6.7
Inlet Air Temp (F)	30.1	40.2	50.3	60.4	70.5	80.6	90.7	100.8	110.9	121.0	132.0	143.0	154.0	165.0	176.0	187.0

When the engine is in the run state configure the spark advance versus the intake air temperature.

Figure 3

%E85 Spark Offset Curve

E85 Spark Offset	0.0	0.0	0.0	0.0	0.3	0.5	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	2.8	3.0
E85 (%)	0.0	6.3	12.5	18.8	25.1	31.1	37.0	43.0	49.3	55.8	62.4	68.6	75.0	81.3	87.5	90.0

When Flex Fuel E85 fuel type is chosen and the FFS E85 tables are enabled this table will add timing to the current spark table based on the amount of E85 in the fuel system

FIGURE 4

The Base Spark Table('s) are edited as seen in the Bigstuff3 GEN4 ECU full software manual located on our website. Click on this link to navigate and download.

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).

The Base Spark Table('s) are edited as soon in the Bigstuff3 GEN4 ECU Full Software Manual located on our website. Click on this link to navigate and download.

• 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 GEN4 section on the website and under the GEN4 PRO XTREME menu will be more information. 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 software or 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 LSU4.9 WBO2 sensor is bad?**

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

• **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. With the engine off its best to move the O2 sensor out of the exhaust and have it hang in the air. Go online with the ECU and navigate to the Gauge Cluster tab and go to the NTKWBO2 tab on the bottom the screen. In the upper right hand corner of the page will be LB%O2 and RB%O2 readings. Go to the AFR Menu and click on the O2 and EGT Parameters section. In the lower right hand corner turn the "Perform NTKO2 WBO2 Air Cal" to "Yes". **WARNING**! Do not hold the O2 sensor as it will start to heat up and you can get severely burned. You will see the O2% readings start to update and after about 5 minutes you should be reading about 18%-22% on either sensor. If you do not read that more than likely the sensor is defective and needs to be replaced. Contact Bigstuff3 for more details at this point. If the sensor reads fine turn the Air Cal to "Off" and turn the ignition off. Wait for the sensor to cool down and reinstall in the exhaust and you are ready to go.

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

-Being dropped

-Running leaded fuel

-Running rich at idle

• **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.

Datalogger acronyms

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_DSRD – 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 – CO_2 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.