



Programming and Data Analysis

I. Hardware Requirements

You will need a PC with blue tooth capability running Windows 7 (32 bit), preferably Windows 8, 8.1 or 10.

II. Software Installation

Down load BCU Editor and Data Analysis programs using the following link. To operate these codes you will need the licensing information that you received from CAS when you purchased your system.

www.CASupercharging.com/licensing

Note: A one year renewable license is included with the purchase of each CAS Boost Control Module. Optional 5 years licenses are available. If you have multiple units they can all be programmed and analyzed using a single PC/license. In this instance you will want to do a “license delete” when ordering a 2nd or 3rd BCU.

III. Establishing Communication

- 1) Power up PC and Boost Control Unit.
- 2) Open PC Control Panel, click “Add a device” and follow self prompting instructions.
- 3) When communication has been successfully established the BCU(s) should appear in your PC’s Device Manager Window.

IV. Programming the BCU

The BCU Editor program is used for programming BCU functions, including parameters that effect performance and enabling/configuring the data logger. The editor also features real time digital displays of BCU functions.

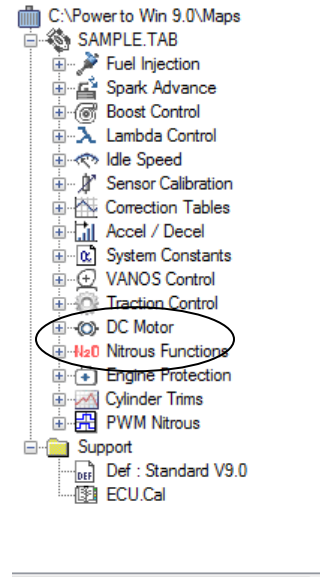
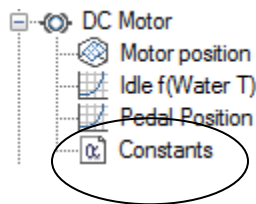


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IV. Programming the BCU Cont'd

EPR Calibrations:

- 1) Open the BCU Editor Program.
- 2) Open the DC Motor Tab on the left tool bar.
- 3) Open the Constants Tab.



- 4) Modify DC Motor Constants as desired.
- 5) Enter Apply, and then Close.

Description	Value
DC Motor Configuration	0.000
Motor frequency (Hz)	3003
Base Duty (%)	50.00
Cranking TPS position (deg)	10.00
Proportional Gain	80.00
Integral Gain	0.000
Integral Timer	16.00
Derivative Gain	0.000
Integral Band (deg)	10.00
Autoshift TPS position (deg)	0.000
Not used	0.000
Not used	0.000

- 6) Save new configuration to PC hard drive using "Save" or "Save As" command.
- 7) Open "SYSICON" on the Toolbar.
- 8) Open "Flash R1 ECU".
- 9) Follow self prompting commands.



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IV. Programming the BCU Cont'd

Real Time BCU Monitoring:

The digital table in the upper right corner of the Editor Window displays operational BCU characteristics as well as several programmed parameters. It is useful for verifying program changes as well as BCU functionality. For example, by electrically disconnecting the Safety Shut-off valve and triggering the system "on" you can observe EPR operation.

RPM ...	0.00
Battery ...	0.00
Target pressure ...	0.00
Boost pressure ...	0.00
DCM Duty % ...	0.00
Motor Position ...	0.00
Ramp Adjust ...	0.00
Air Temp ...	0.00
ECU Temp ...	0.00

V. Data Logging

The BCU Editor program is used for configuring the BCU data logger and downloading data from the logger to a permanent file location.

Configuring the Logger:

- 1) Open the Editor Program.
- 2) Click on the Logger Icon.
- 3) Click on the Logging Table Icon.
- 4) Edit values in Logging table, turning on and setting sampling frequencies of the parameters to be monitored.



Channels	Enable	Channel	Rate
070		Distance	10
071		Lap count	Off
096		Lap time	Off
128		RPM	10
129		Battery	5
130		Target pressure	10
131		Boost pressure	2
132		Exhaust pressure	Off

The 'Logging Table' dialog box has 'OK', 'Cancel', and 'Help' buttons on the right. The 'Target pressure' row is circled in red.



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- 5) Click ok.
- 6) Click "Send Setup" to download logging configuration into BCU.
- 7) Follow self prompts.

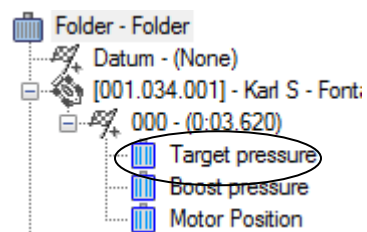


VI. Data Analysis

The BCU Analysis program is used for displaying time domain information for the variables that were configured to be tracked by the BCU's data logger.

Data Viewing:

- 1) Open the BCU data analysis program.
- 2) Open "FILE" on the toolbar.
- 3) Open "Add Outing" if the display is empty or "Replace Outing" if switching data sets.
- 4) Select data file you wish to display.
- 5) Right click on displayed variable(s) if you wish to add or change the parameters displayed.





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VI. Data Analysis Cont'd

- 6) The graphical display can be printed, Y axis scaling altered, channel colors switched and X axis scaling altered (zoomed in or out to facilitate analysis. Also, multiple runs can be overlaid for comparative purposes.

