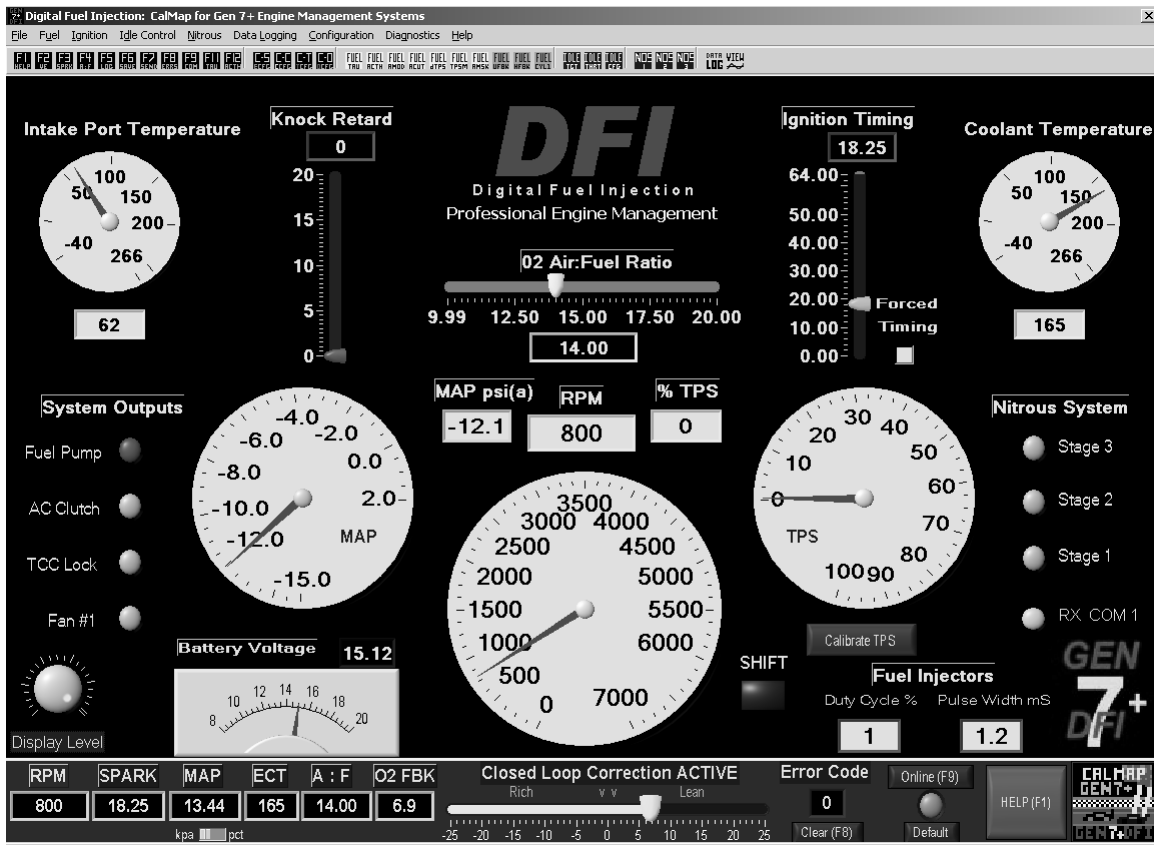


ACCEL/DFI Generation 7+ ECM



Version 5.0 Upgrade

THE FOLLOWING CHANGES CORRESPOND TO CALMAP SOFTWARE VERSIONS 5.0 AND HIGHER, AND ACCEL/DFI GENERATION 7+ ENGINE CONTROL MODULES WITH FIRMWARE REVISIONS OF 5.0 AND HIGHER.

IF YOU HAVE ANY GENERATON 7 ECM WITH AN EARLIER FIRMWARE REVISION, CONTACT YOUR LOCAL EMIC DEALER FOR DETAILS ON HOW TO UPGRADE YOUR MODULE.

A DEALER LISTING IS LOCATED ON THE WEB AT (<http://mrgasket.com/>). CLICK ON THE ACCEL/DFI LOGO LOCATED AT THE BOTTOM OF THE HOME PAGE.

Version 5.0 Upgrade Features:

ECM Pulse Width Modulated Outputs:

- Available on Nitrous 1 & 2, Shift, and TCC Lockup Outputs.
- Standard RPM/TPS/MAP Thresholds used to control outputs.
- Duty Cycle vs. RPM/MAP used to control PWM signals.
- ECT Correction Graphs available for Nitrous outputs.

CalMap Location:

Pulse Width Modulation Configuration Screen (CTRL+M)

Network Tuning Capability:

- Tune an ECM remotely using an Internet connection with CalMap version(s) 5.0.0 and higher.

CalMap Location:

Diagnostics Menu -> Network Tuning

Nitrous Override/Purge Mode:

- RPM, TPS, MAP thresholds and all timers can be ignored in order to immediately enable Nitrous injection on demand.

CalMap Location:

Nitrous Configuration Screens

Nitrous Safety Delay Bypass

- In applications where the Nitrous Oxide system outputs are used to control things other than a Nitrous system, it is now possible to bypass the Nitrous Oxide system Startup Safety Delay. This will permit the Nitrous system outputs to activate at the onset of engine rotation instead of waiting until the engine is known to be running.

CalMap Location:

Nitrous Configuration Screens

Nitrous Engine Speed Limiting

- Entering 0 RPM in the Nitrous Max RPM field will disable the Nitrous Rev Limiter function.

CalMap Location:

Nitrous Configuration Screens

Idle Air Controller Protection:

- Enhanced "Boost Proof" control to protect the IAC motor when used in certain forced induction applications. This feature is only available for applications using 2 or 3 BAR MAP sensors.

CalMap Location:

Idle Configuration Screen (CTRL+I)

Communication Port Settings Saved to Preferences File

- When using a serial communications port other than 1 or 2, the port number is set to be the default port to be used for ECM communications.

CalMap Location:

Splash Screen, Right-Click on "Online to ECM" button.

Updated Ford EDIS Compatibility:

- Updated the ECM's ability to drive Ford EDIS modules in order to provide ignition control via the associated coil packs.

Improved Insert Keystroke functionality:

- In CalMap version 5.0.0 and Higher, pressing the Insert key will repeatedly toggle between the last 2 calibration screens that were displayed.

Updated Current Handling Capability on selected Outputs:

- Nitrous Stages 1 & 2, Shift Light/Fan 2, Torque Converter Lockup, Fan #1, MIL, and AC Clutch Disable output drive circuits have been upgraded to 1.0 Amp output drivers. Only new version 5.0 ECMs shipped from the factory AFTER 8/1/2005 will have this capability. Upgraded ECMs will not get this modification unless specifically requested at the time of upgrade. There may be an additional charge for this modification beyond the standard upgrade fee.
- Improved overcurrent protection on EST output.

New and Revised 4-Cylinder Injection Strategies:

- Designed specifically for Motorcycle and small engine applications.
- Injectors 5-8 can mirror the PW of injectors 1-4.
- Fueling can switch between injectors 1-4, 5-8, or 1-8 seamlessly.
- Functions in Staged Sequential or Staggered Batch modes with appropriate ECM Firmware.

CalMap Location:

System Configuration Screen, (CTRL+S), Injection Type Selector

Staged Sequential (Standard Firmware)

This mode of fueling can be used to deliver additional fuel to the engine via injector drivers 5-8 as specified in the engine firing order. Adjustments are made to the injector duty cycles in order to maintain delivery of the calculated amount of fuel as determined by the calibration fueling tables.

During normal operation, injectors 1-4 are fired sequentially, once each per full engine revolution. When duty cycle > 80% or TPS > programmed threshold (if enabled), injectors 5-8 are fired sequentially along with injectors 1-4. The duty cycle is reduced by 50% to account for additional fuel supplied by injectors 5-8. The staged delay table can be used to control the time that both sets of fuel injectors are operated at the full injector duty cycle. After the time programmed by this table elapses, both sets of fuel injectors will operate at 50% of the calculated duty cycle to continue to deliver the specified amount of fuel.

Swapped Sequential (Standard Firmware)

This mode of fueling can be used to seamlessly switch engine fuel delivery from fuel injector drivers 1-4 to injector drivers 5-8 as specified in the engine firing order. The timing of the switchover may be determined by a combination of any selected RPM, TPS, or MAP threshold value(s).

During normal operation, Injector drivers 1-4 are fired sequentially, once per full engine revolution. When the programmable RPM, TPS, and MAP threshold value(s) for auxiliary injector control have been met, injector drivers 5-8 are fired sequentially in place of injector drivers 1-4, using the injector pulse width values calculated for drivers 1-4 respectively. Injector drivers 1-4 are turned off when 5-8 are engaged, and no adjustment is made to the injector duty cycle. The physical locations of drivers 1-8 are specified in the engine firing order. The staged delay table is not used during this mode of injection.

Stacked Sequential (EDIS FIRMWARE ONLY)

This mode of fueling can be used to deliver additional fuel to the engine via injector drivers 5-8 as specified in the engine firing order. The additional fuel can be delivered at a combination of any selected RPM, TPS, or MAP threshold value(s).

During normal operation, fuel injector drivers 1-4 are fired sequentially, once per full engine revolution. When the

programmable RPM, TPS, and MAP threshold value(s) for auxiliary injector control have been met, injector drivers 5-8 are fired sequentially along with drivers 1-4. Injector drivers 5-8 use the injector pulse width values calculated for drivers 1-4 respectively. The duty cycle is NOT reduced to account for any extra fuel provided by injectors 5-8. The staged delay table is not used during this mode of injection. The physical locations of drivers 1-8 are specified in the engine firing order.

Staggered Batch (Standard Firmware)

Injectors (1 and 2) and (3 and 4) are batch fired in pairs once during each crankshaft revolution resulting in each pair of injectors firing twice per full engine revolution.

Swapped Batch (EDIS FIRMWARE ONLY)

This mode of fueling can be used to seamlessly switch engine fuel delivery from fuel injector drivers 1-4 to injector drivers 5-8 as specified in the engine firing order. The timing of the switchover may be determined by a combination of any selected RPM, TPS, or MAP threshold value(s).

During normal operation, fuel Injector drivers (1 and 2) and (3 and 4) are batch fired in pairs once during each crankshaft revolution resulting in each pair of injector drivers firing twice per full engine revolution. When programmed RPM, TPS, and MAP threshold value(s) for auxiliary fuel delivery are met, injector drivers 5 and 6 are fired in place of 1 and 2, using the pulse width values calculated for injector drivers 1 and 2. Injector drivers 7 and 8 are fired in place of 3 and 4, also using the pulse width values calculated for drivers 3 and 4 respectively. No adjustment is made to the calculated injector duty cycle. The physical locations of drivers 1-8 are specified in the engine firing order.

Stacked Batch (EDIS FIRMWARE ONLY)

This mode of fueling can be used to deliver additional fuel to the engine via injector drivers 5-8 as specified in the engine firing order. The additional fuel can be delivered at a combination of any selected RPM, TPS, or MAP threshold value(s).

Injectors (1 and 2) and (3 and 4) are batch fired in pairs once during each crankshaft revolution resulting in each pair of

injectors firing twice full per engine revolution. When programmed RPM, TPS, and MAP threshold value(s) for auxiliary fuel delivery are met, injectors 5 and 6 are fired along with 1 and 2, sharing the same pulse width values respectively. Injectors 7 and 8 are fired along with 2 and 3, also sharing the same pulse width values respectively. No adjustment is made to the calculated injector duty cycle.