

# TITAN Version Changes

Updated 27/06/2011

## Explanation 2.2.1.A (Example)

2. PC Software Version

2. TITAN ECU

1. Protocol Version

A. Firmware Version

2.2.0.0 This is the first TITAN Test release version. New feature on the EMU computers is the **Maximum Timing** and the **Pulses / RPM** Scaling for rev counters. A few bugs may still be resident but should not hamper the basic operation.

2.2.0.A The first version of **Micro Fueling Injector** and a **Boost Limiter** feature is included.

2.2.1.0 This is the first official release version.

Firmware changes are that the engine limiter now only cut fuel and not the spark anymore. It also retards the timing to lose power before the fuel cut. Final fuel cut happens 300 RPM after the Limiter Setting. This helps to improve soft engine limiting.

The Map files extension changed from .EMU to .ECU Note that older Map file versions cannot be opened by late software versions.

Data Logging is now active and you can record to a data file and play it back afterwards.

2.2.2.0 On the Setup – Engine Configuration the “MAP Number is added. It is not used at this stage but for future development on certain firmware.

On the Setup - Fuel page the following is added:

- At Fuel Calculation, “Both” is added. This will let the tuner use the TPS sensor for idling and the MAP sensor for running.
- Also on this page “Fuel Injection Type” is added which is an indication of which type of injection is used by the ECU firmware. It cannot be changed at this stage.
- Under Fuel Configuration “Injection Degrees” is added. It is not used at this stage but for future development on certain firmware.

On the Setup - Sensors page under Lambda Configuration a “Startup Delay” is added. This helps with the use of the Lambda graphs.

Changes were made in the firmware that smoothes the Micro Fueling operation.

2.2.2.A The Analog Vacuum gauge scaling error is fixed.

2.2.2.B The ‘Write to ECU’ bug when you quit the tuning software when not saved, is fixed.

2.2.3.0 Error Codes are implemented to help with diagnostics for startup and faultfinding. See the **Error Codes** file.

The test function is added to help with trigger signal setup and diagnostics.

Easy Tune function is added to cut time on Dyno tuning.

The tuning accuracy on the graph to the ECU is improved for Realtime Tracking.

The Launch Control activation RPM's is changed from a fixed 4 000 RPM to 500 RPM below the Launch Limiter value.

The Injection Start Degrees are added for the Full Sequential programs.

The TPS Calibration is changed to a more automatic operation.

The Negative TPS Polarity function is added for piggy-backing onto a reverse TPS signal.

On certain firmware a zero can be entered at *Pulses / RPM* to copy the trigger signal on the RPM output, to help with piggy-back systems.

A TPS Gain function is added to improve the TPS blending for long duration Cams.

The Lambda Control % is increased from 10% to 20% and the Voltage control Range is increased from 0.2V to 0.4 Volt up or down from the target volts.

The Lambda Low Limit has changed from manifold pressure to RPM and moved to the bottom graph.

The Engine limiter is moved to the Turbo Setup.

A *Water Over Temperature Limiter* is added to protect engine against overheating.

A Rev-limiter *Spark Only* and *Hard* limit functions are added to the RPM Limiter.

The Rev-limit adjustment is increase to 14 000 RPM, even if the scale can only adjust till 9 900 RPM.

A Hide button is added for the Fuel RPM Correction graphs to display only one graph during tuning.

The same function applies when Realtime Tracing is enabled.

Lots of improvements in the Tuning software are made.