ECUMASTER EMU

CHANGE LOG

Version 1.016

Firmware EMU

Critical bugs

Important bugs

1) Coild dwell time calculations corrected for low tooth count trigger wheels,

2) Idle control valves bug fixed

Low priority bugs

1) VSS reading for non moving car bug fixed

2) Integral limit for PID controllers improved

Improved functions

1) Wide band oxygen sensor failure detection improved,

2) Boost control PID support improved **(incompatible with previous versions!)**

3) Improved support of 3 wire PWM idle solenoids **(incompatible with previous versions!)**

New functions

1) Support of Honda J35A8 trigger

2) Support of Rover 18-1-18-1 trigger

3) Support of Porsche trigger (132 teeth + 1 tooth on cam)

4) Lotus Elise trigger added

5) Subaru 36-2-2-2 trigger added

6) Subaru 6/7 trigger added

7) Dodge SRT trigger added

8) Missing tooth camshaft trigger added

9) Mazda MX-5 three teeth trigger added

10) Mazda MX-5 two teeth trigger added

11) CLT sensor range increased to -40C-250C

12) Inverted output for main relay

13) Option to disable spark during fuel cut (lower the coils temperature)

14) Gear dependent nitrous injection

15) Acceleration enrichment range increased

16) New fuel and spark strategies: *Alpha-N with MAP based ignition, Alpha-N with MAP based ignition and MAP multiplication*

17) New 3D Tables: T*PS vs MAP fuel crrection* oraz *TPS vs MAP ignition correction*

18) Added support of Oil pressure sensor, oil temperature sensor and fuel pressure sensor

19) Added 2D table for ignition control during idle

20) Added 2D table to control DC of idle valve when no in idle mode (DC RPM Ref table)

21) Reverse option for all idle valve types

22) Idle RPM maximum value for idle control enable

23) Ignition cut idle control with 2D table

24) Double Vanos support

25) Race Technology dashboard support

26) User defined low pass filter added for MAP sensor

27) Dual tables for VE, AFR, IGN, BOOST, VVTI, CRANKING FUEL

28) Tables switch

29) Drive by wire support (external module required)

30) Static injection angle

31) Possibility to inject fuel twice per cycle

32) VTEC support (with automatic tables switching)

33) VSS signal filtering

34) WBO heater can be used as a NBO sensor heater

35) Advanced FlexFuel support

36) WBO controller can be activated when the engine is not running

37) Advanced CAM signal filtering

38) Anti lag system (ALS)

Klient pod Windows

1) Road dyno

2) USB connection improved

3) Status bar information are coloured

4) Making maps permanent feedback added (sound and status bar)

5) Making maps permanent saves current configuration in Quicksave sub directory

6) Date formatting in log file name improved

7) Bins creator for X axis bug fixed

8) Changing bins automatically reinterpolate the whole table

9) Autoscale of 3D graphs and colour ranges

10) Log presets window improved

11) Space bar pauses / resumes log scrolling

12) Log can be scrolled used arrow key and Page Up / Page Down

13) Fixed crash with 2D tables

14) View assigned outputs tool added

15) CTRL + Arrows copy the current table cell in the give direction

16) Copy/paste of tables cells (CTRL+C, CTRL+V)

17) Log parameters in log windows are sorted and coloured to improve readability

18) Log groups and gauges are alphabetically sorted

19) Improved 3D graph visual side

20) Improved temperature sensor wizard

EMU Firmware

Critical bugs

1) In a case of non running engine and modification of **primary and secondary trigger**, under some circumstances one of the ignition coils could be activated. It could damage ignition coil or EMU device.
2) **Overdwell** guard for active coils fixed.

Important bugs

1) Reinitialization of ignition control module during changing parameters of **primary, secondary trigger** and **ignition outputs** fixed,

Low priority bugs

1) Fixed function **PWM output #1 disable during cranking,**
2) **PWM output** reassignment of output fixed.

Fixed functions

1) **Flat shift** works correct,
2) **Boost controller** - function of boost correction in function of vehicle speed and EGT works correct for Open and Close loop control.

New functions

1) New primary trigger patterns for: Honda K20 series, Nissan trigger
2) Secondary trigger VW R32, 2JZ VVTi, 4+1
3) Support for second camshaft input (CAM2) added,
4) VVTi support added (up to 2 camshafts),
5) **Ignition output offset** added for ignition output offsetting,
6) **Acceleration enrichment** scale in function of CLT added ,
7) **Pit limiter** added,
8) **Launch control** can be activated without using analog inputs (**always active**),
9) AIM protocol added,
10) **Next edge rejection angle** parameters added to **Primary Trigger** configuration**,**
11) Fuel correction in function of EGT,
12) **Check engine** indicator may be activated by too high EGT,

13) **Check engine** indicator may be activated by knock sensing.

Windows client

Fixed functions

1) Graphical logs drawing function works 4 times faster,

2) Units on graphical logs do not overlap,

3) Initial windows size bug fixed,

4) Improved client behaviour when EMU with newer firmware detected,

5) Improved configuration import during firmware upgrade.

New functions

1) Preset list for graphical logs

2) Automatic cursor following on 3D tables,

3) Internal scope for CAM2 input,

4) New keyboard shortcuts.

Shortcut	Function
CTRL+F	Enter / leave full screen mode
F9	Show / Hide parameters panel
SHIFT+F9	Show / Hide event log
F2	Makes tables / parameters permanent
CTRL+O	Open project file
CTRL+S	Save project file
CTRL+Z	Undo
CTRL+Y	Redo
CTRL+SHIFT+C	Close all windows on desktop
CTRL+1 to CTRL+7	Switches between desktops
CTRL+TAB	Switches between windows on desktop forward
CTRL+SHIFT+TAB	Switches between windows on desktop backward
CTRL+H	Interpolates selection horizontally
CTRL+L	Interpolates selection vertically
CTRL+D	Interpolates selection diagonal