ECUMASTER EMU
CHANGE LOG
Version 1.100

Firmware EMU

Important bugs

1) FlexFuel sensor temperature readings fixed

2) Knock sensor channel #2 readings bug fixed. **The engine noise table prepared with the previous software version should be lowered about 0.22V due to change in dynamic range of knock sensor input.**

3) 2JZ VVTi engine start improved (cam decoder bug fixed)

4) Honda J35A8 trigger engine start bug fixed

5) Honda S2000 dash CLT output big fixed

6) VSS to activation of Flat Shift bug fixed

7) VSS to activation of Nitro bug fixed

8) VVTi CAM control solenoids frequency base bug fixed

9) ALS bug fixed when engine goes outside RPM range

10) VVTi valve freqency bug fixed

Low priority bugs

1) Race Technology data stream bugs fixed

2) Value ranges in datalog for FlexFuel channels fixed

3) Idle ignition control without 2D table strategy bug fixed

Improved functions

1) VE, IGN, AFR, BOOST tables are 16x20

2) Faster engine start

3) Nissan trigger improved. **Please check ignition angle with timing light after upgrade!**

4) IAT ignition correction is not applied if engine is idling.

5) Check engine flags are logged now

6) dTPS integrator constant can be defined

7) Maximum value of Idle afterstart increase changed to 800

8) DBW opening characteristic changed for 3D table in function of TPS and RPM

9) Maximum value for ASE table increased to 255%

10) Maximum value for Warmup table increased to 255%

11) Cycle once for parametric outputs

12) Idle control internal resolution increased (control by 0.25%DC)

13) VANOS solenoid DC set to 50% when not controlled

14) DBW support for ALS (Use DBW, BW Throttle opening)

15) Idle PWM frequency max limit increased to 500Hz

16) WBO error checking sensitivity tuned

17) Vehicle speed is transmitted in Ecumaster serial protocol.

18) Subaru 36-2-2-2 trigger improved

19) TPS Rate log improved

20) WBO error detection improved

21) Nissan trigger decoder modified. Check your ignition timing after update!

22) FlexFuel readings can be limited to TPS opening

23) Launch control can be activated by MUX input

24) TPS/MAP fuel correction table values expanded from 200% to 255%

25) ALS can disable nitrous activation

26) Restore rate for knock sensor action can be lower than 10

27) Ignition event trim extended to +/- 15 degrees

28) FlexFuel sensor can be connected to VSS input

New functions

1) TPS value under min voltage and TPS value over max voltage parameters added. **For TPS with inverted max and min value default values should be modified!**

2) Audi trigger 135 teeth

3) Spike filter for CAM#1 removed completely

4) New CAM#2 decoder: "Prim trig tooth range"

5) 3UZ-fe cam decoder

6) Two symetrical tooth cam decoder (wasted spark)

7) TFI trigger support

8) BMW E30 M3 116 tooth support

9) Cam trigger advanced filtering rewritten

10) 3 missing tooth primary trigger decoder added

11) Mitsubishi Colt 1.5 trigger pattern

12) Support for CAM N+1 trigger as primary one (divide real number of tooth by 2, eg. For 12+1 the number of teeth is 6)

13) Ignition lock options (primary trigger settings) to lock ignition angle to fixed value

14) Disable CAM sync above given RPM

15) Sensitivity switch strategy for CAM sync improved

16) Scope trace for N+1 primary trigger bug fixed

17) VW 1.8T 4 teeth cam trigger type added

18) N + 1 60% - CAM#1 trigger added

19) Ignition event that causes knock is logged (Knock ignition event channel)

20) Ignition retard for soft rev limiter

21) CAN-BUS module support

22) Support for CAN MODULE analog inputs

23) CAN Ext. switch introduced for activation functions like LC, Boost Tbl, TBL Set, etc.

24) EMU data log could be transmitted over CAN BUS

25) Citroen C2 CAN BUS support (dasboard, bsi, power steering)

26) VW Passat instrument cluster support (RPMs)

27) Lotus Elise/Exige dashboard support

28) MOTEC M800 set 1 CAN protocol support

29) Haltech E8 E11v2 CAN data

30) CAN-DASH output for Shift Light and Check engine light

31) RX8 Dash CAN protocol RPM fixed

32) Citroen C2 CAN protocol improved (speed displayed without ABS computer

33) Pectel SQ-6 Omega CAN protocol

34) Ford Fiesta MK7 CAN messages added

35) BMW Z4 CAN dashboard support

36) Mazda RX8 CAN dashboard support

37) Ids of EMU CAN-BUS protocol can be defined

38) Honda S2000 dash CLT output

39) BMW E46 CAN-Bus dashboard support

40) Up to 8 EGT sensors over CAN-BUS support

41) Electronic throttle position can be used as TPS

42) MUX Switch support

43) Traction control added

44) Fuel level sensor support

45) Oil pressure, Oil temperature and Fuel pressure can be used as argument for

parametric output

46) Oil pressure cut function added

47) VTEC Off delay option added

48) VVTi for CAM#2 can use CAM#1 angle table (useful for V engines with 2 inlet VVTi cams)

49) Rolling antilag strategy added

50) Delta fuel pressure correction

51) Delta fuel pressure fail safe with RPM limit

52) Engine protection for low and high coolant temperatures (rev limiters)

53) Fuel cut above pressure variable max value increased to 700kPa

54) MAP filtering improved. New filtering modes and filter power table in function of RPM

55) External MAP offset can be negative

56) Injectors opening time in battery function can be added to cranking and prime pulse fuel dose

57) Cranking time correction table

58) Per cylinder EGT fuel correction

59) EGT Boost DC correction based on maximum EGT from EMU and CAN sesnors

60) Each injector correction send to log (Fuel Trim 1-6)

61) VSS input frequency divider

62) WBO Heater support improved

63) Time cycling function added to parametric outputs

64) Idle DC can be altered by analog input voltage

65) Idle DC ref correction in function of RPM error (2D table)

66) Ignition correction table in function of CLT for Idle

67) Double Warmup correction tables for FlexFuel use

68) Double ASE correction tables for FlexFuel use

69) Removed DBW position limit in function of RPM

70) Flat shift fixed time ignition cut

71) Cranking gap detection scale – for adjusting gap detection during cranking

72) Per cylinder injection trim

73) PWM table can by scaled by PWM CLT scale table

74) BMW Multitooth CAM#2 trigger added

75) Gear detection based on voltage gearbox sensor

76) Gear cut strategy added

77) VTEC VSS Min parameter added

78) Synchronization of two engines via extension port

79) Boost DC correction in function of boost error (2D table)

80) Boost control solenoid DC is 0 if under inactive pressure (not min DC as in previous versions)

81) Min CLT for Nitrous activation

Klient pod Windows

1) New operators for table editing added. Numbers with operator * multiply cells value (eg. 0,5*), operator + and – adds and subtracts values (eg. 7+ adds 7 to all selected cells)

2) Help for all EMU options added

3) Contributors list added

4) DBW Wizard

5) 20Hz dataloging (previous 10Hz)

6) Desktops could be renamed

7) Export selected log channels to CSV text file (separation character is ;)

8) Log window improved:

9) scaling

10) HOME/END keys

11) 0.1 sec bars when scaled up

12) Customize keys (Tools / Customize keys)

13) New shortcuts added

14) New flags added to status bar

15) Clear log crash fixed

16) UI flickering problem improved

17) Bin axis wizard works with non integer numbers

18) New injectors added to Injectors Wizard

19) OpenGL support improved

20) 3D tables cross hair display method changed

21) CTRL+A selects all cells in table

22) Option for square 3D Tables

23) Child windows keyboard focus improved

24) Desktops are saved to disc before firmware upgrade

25) Tables configuration bug fixed (color scheme selection)

26) Bug with Select All fixed

27) New option for 3D tables added (automodify cells above cursor)

28) About box shows device serial number

29) Throttle Bosch 0280750030 added to the DBW Wizard

30) TAB key switches between options tree view and child windows

31) Next/Previous tab shortcuts added],[keys

32) Save / Load desktop layouts

33) OpenGL crash fixed

34) Speed optimization

35) Configuration for 3D tables (load axis definition, color scheme)

36) Password protected EMU can be reset to factory settings

37) Load on Y axis bug fixed (storing tables to EMU)

38) Magneti Marelli temperature sensors added (AST04 and WST04)

39) Magneti Marelli BAE 801 double coils wizard added

40) 2D Tables reinterpolation bug fixed

41) Load on Y axis bug fixed

42) Log is referenced on tables when tracked

43) When loading project 3D tables with load on axis are updated correctly (AlphaN vs Speed density)

44) 3D tables position and size are handled correctly

45) Honda temperature sensor added to temp. sensors wizard

46) UI outlook improved for large system fonts

47) Windows with 3D tables splitting strategy improved

48) Help for parameters windows introduced (actually only for TPS and Oil pressure cut)

49) Log can be scrolled with mouse wheel

50) Bug with scrolling log using keys fixed

51) User manual is installing with the software

52) Error codes are displayed by name not a code number

53) Engine status is displayed correctly (Running instead afterstart)

54) Windows with parameters have correct height (all parameters are visible without scroll bar)

Version 1.016

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: TPS 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