Haltech
ENGINE MANAGEMENT SYSTEMS

ECU BUYERS GUIDE

		E550	E750	E1000	E1500	E2000	E2500	E2500 T	E2500 + REM	PRO Plug In	SPORT GM
OUTPUTS	**Injection Outputs**	**1 - 4** Unused outputs are NOT re-assignable	**1 - 6** Up to 5 unused are re-assignable as extra user defined outputs	**1 - 4** Up to 3 unused are re-assignable as extra user defined outputs	**1 - 4** Up to 3 unused are re-assignable as extra user defined outputs	**1 - 8** Up to 7 unused are re-assignable as extra user defined outputs	**1 - 8** Up to 7 unused are re-assignable as extra user defined outputs	**1 - 8** Up to 7 unused are re-assignable as extra user defined outputs	**1 - 16** Up to 7 unused on E2500 are re-assignable as extra user defined outputs	As per OEM vehicle	**2**
	Ignition Outputs	**1 - 4** Unused outputs are NOT re-assignable	**1 - 6** Up to 5 unused are re-assignable as extra user defined outputs	**1 - 4** Up to 3 unused are re-assignable as extra user defined outputs	**1 - 4** Up to 3 unused are re-assignable as extra user defined outputs	**1 - 8** Up to 7 unused are re-assignable as extra user defined outputs	**1 - 8** Up to 7 unused are re-assignable as extra user defined outputs	**1 - 8** Up to 7 unused are re-assignable as extra user defined outputs	**1 - 8** Up to 7 unused on E2500 are re-assignable as extra user defined outputs	As per OEM vehicle	**1**
	Dedicated Outputs (non re-assignable)	**0**	**0**	**1** ECR	**1** ECR	**1** ECR	**1** ECR	**1** ECR	**1** ECR + REM coms	As per OEM vehicle	As per OEM vehicle
	User Definable Outputs	**5** inc fuel pump	**5** inc fuel pump	**9** inc fuel pump	**11** inc fuel pump	**9** inc fuel pump	**11** inc fuel pump	**11** inc fuel pump	**9 + 8** inc fuel pump	**4** via rear AUX Connector	**4** via rear AUX Connector
	Total Outputs	**13**	**17**	**18**	**20**	**26**	**28**	**28**	**42**	N/A	N/A
INPUTS	**Dedicated Inputs** (non re-assignable)	**6** Crank, Cam, Air & Coolant Temp TPS Internal MAP	**3** Crank, Cam Internal MAP	**5** 1 x Knock Crank, Cam Ignition Switch Internal MAP	**5** 1 x Knock Crank, Cam Ignition Switch Internal MAP	**6** 2 x Knock Crank, Cam Ignition Switch Internal MAP	**6** 2 x Knock Crank, Cam Ignition Switch Internal MAP	**6** 2 x Knock Crank, Cam Ignition Switch Internal MAP	**6** 2 x Knock Crank, Cam Ignition Switch Internal MAP + REM coms	As per OEM vehicle	As per OEM vehicle
	User Definable Inputs	**2** 1 Analogue 1 Digital	**7** 5 Analogue 2 Digital	**14** 10 Analogue 4 Digital	**14** 10 Analogue 4 Digital or Analogue	**14** 10 Analogue 4 Digital	**14** 10 Analogue 4 Digital or Analogue	**14** 10 Analogue 4 Digital or Analogue	**27** 10 + 10 Analogue 3 Digital or Analogue 4 Digital	**4** + Direct Flexfuel input on selected models via rear AUX Connector	**4** via rear AUX Connector
	Total Inputs	**8**	**10**	**19**	**19**	**20**	**20**	**20**	**33**	N/A	N/A
CAN & I/O EXPANSION	**Additional Inputs/Outputs (I/O)** (via external CAN expansion)	**Single I/O Expander 12** 4 x AVI 4 x DPI 4 x DPO	**Single I/O Expander 12** 4 x AVI 4 x DPI 4 x DPO	**Up to 2 I/O Expander 12** Up to 8 x AVI Up to 8 x DPI Up to 8 x DPO	**Up to 2 I/O Expander 12** Up to 8 x AVI Up to 8 x DPI Up to 8 x DPO	**Up to 2 I/O Expander 12** Up to 8 x AVI Up to 8 x DPI Up to 8 x DPO	**Up to 2 I/O Expander 12** Up to 8 x AVI Up to 8 x DPI Up to 8 x DPO	**Up to 2 I/O Expander 12** Up to 8 x AVI Up to 8 x DPI Up to 8 x DPO	**Up to 2 I/O Expander 12** When REM User Definable I/O is disabled	**Up to 2 I/O Expander 12** Up to 8 x AVI Up to 8 x DPI Up to 8 x DPO	**Single I/O Expander 12** 4 x AVI 4 x DPI 4 x DPO
FEATURES	**Waterproof**	✓	✓	✓ (with pocket cover)	✓ (with pocket cover)	✓ (with pocket cover)	✓ (with pocket cover)	✓ (with pocket cover)	✓ (with pocket cover)	✗	✗
	DBW Throttle	✗	✗	✗	**1** Requires (2) user defined outputs & (4) user defined inputs	✗	**1** Requires (2) user defined outputs & (4) user defined inputs	**1** Requires (2) user defined outputs & (4) user defined inputs	✗	As per OEM vehicle	✗
	Low Imp Injector control	✓ 8A Peak 2A Hold	✓ 8A Peak 2A Hold	✓ 8A Peak 2A Hold Programable peak time	✓ 8A Peak 2A Hold Programable peak time	✓ 8A Peak 2A Hold Programable peak time	✓ 8A Peak 2A Hold Programable peak time	✓ 8A Peak 2A Hold Programable peak time	✓ 8A Peak 2A Hold Programable peak time	✓	✓
	Flex Fuel Input	✗	✓ Direct input	✓ Direct input	✓ Direct input	✓ Direct input	✓ Direct input	✓ Direct input	✓ Direct input	✓ Direct input on selected models otherwise requires I/O 12 Expander	✓ Requires I/O 12 Expander
	Closed Loop 02 Control (With optional external CAN O2 Wideband Controller Kit)	✓ Single (Short Term)	✓ Single (Long Term Learning)	✓ Dual Bank (Long Term Learning)	✓ Dual Bank (Long Term Learning)	✓ Dual Bank (Long Term Learning)	✓ Dual Bank (Long Term Learning)	✓ Dual Bank (Long Term Learning)	✓ Dual Bank (Long Term Learning)	✓ Single or Dual as per OEM vehicle (Basic Long Term)	✓ Single (Short Term)
	Knock Control	✗	✗	✓ Single (Short Term)	✓ Single (Long Term Learning)	✓ Dual (Short Term)	✓ Dual (Long Term Learning)	✓ Dual (Long Term Learning)	✓ Dual (Long Term Learning)	As per OEM vehicle	✗
	Variable Cam Control	✗	**1** Single cam sensor only. Requires 1 user defined input & output	**Up to 2** (Intake Only) Requires a minimum of (1) user defined input & output per variable cam	**Up to 4** Requires a minimum of (1) user defined input & output per variable cam	**Up to 2** (Intake Only) Requires a minimum of (1) user defined input & output per variable cam	**Up to 4** Requires a minimum of (1) user defined input & output per variable cam	**Up to 4** Requires a minimum of (1) user defined input & output per variable cam	**Up to 4** Requires a minimum of (1) user defined input & output per variable cam	As per OEM vehicle	✗
	Closed Loop Idle Speed Control	**BAC** Requires (1 or 2) user defined outputs	**BAC** Requires (1 or 2) user defined outputs	**BAC** Requires (1 or 2) user defined outputs or **4 wire stepper** Requires (4) user defined outputs	**BAC** Requires (1 or 2) user defined outputs or **4 wire stepper** Requires (4) user defined outputs	**BAC** Requires (1 or 2) user defined outputs or **4 wire stepper** Requires (4) user defined outputs	**BAC** Requires (1 or 2) user defined outputs or **4 wire stepper** Requires (4) user defined outputs	**BAC** Requires (1 or 2) user defined outputs or **4 wire stepper** Requires (4) user defined outputs	**BAC** Requires (1 or 2) user defined outputs or **4 wire stepper** Requires (4) user defined outputs	As per OEM vehicle	As per OEM vehicle
	Long Term Learning (Auto Tune)	✗	Fuel, Idle & Cam Control Up to 3D	Fuel, Idle, Boost & Cam Control Up to 3D	Fuel, Ignition, Idle, Boost & Cam Control Up to 4D	Fuel, Idle, Boost & Cam Control Up to 3D	Fuel, Ignition, Idle, Boost & Cam Control Up to 4D	Fuel, Ignition, Idle, Boost & Cam Control Up to 4D	Fuel, Ignition, Idle, Boost & Cam Control Up to 4D	Fuel & Ignition as per OEM. Basic	✗
	Data Logging	Direct to Laptop Log all available channels directly to your hard drive for tuning and diagnostics	Laptop & Onboard 512 KB, 10 Chanel (Max rate 50ms - 20Hz)	Laptop & Onboard 1 MB, 20 Channel (Max rate 50ms - 20Hz)	Laptop & Onboard 2 MB, 40 Channel (Max rate 5ms - 200Hz)	Laptop & Onboard 1 MB, 20 Channel (Max rate 50ms - 20Hz)	Laptop & Onboard 2 MB, 40 Channel (Max rate 5ms - 200Hz)	Laptop & Onboard 2 MB, 60 Channel (Max rate 5ms - 200Hz)	Laptop & Onboard 2 MB, 60 Channel (Max rate 5ms - 200Hz)	Laptop & Onboard 448 KB, 20 Channel (Max rate 5ms - 200Hz)	Laptop & Onboard 448 KB, 10 Channel (Max rate 5ms - 200Hz)
	CAN Ports	**1** Haltech Dashes and expansion devices or OBDII (Live data & diagnostics)	**1** Haltech Dashes and expansion devices or OBDII (Live data & diagnostics)	**2** Haltech Dashes and expansion devices & OBDII (Live data & diagnostics)	**2** Haltech Dashes and expansion devices & Supported OEM CAN or OBDII (Live data & diagnostics)	**2** Haltech Dashes and expansion devices & OBDII (Live data & diagnostics)	**2** Haltech Dashes and expansion devices & Supported OEM CAN or OBDII (Live data & diagnostics)	**2** Haltech Dashes and expansion devices & Supported OEM CAN or OBDII (Live data & diagnostics)	**2** Haltech Dashes and expansion devices & Supported OEM CAN or OBDII (Live data & diagnostics)	**1** Haltech Dashes and expansion devices	**1** Haltech Dashes and expansion devices
	Injection Stages	**2** Rotary Engines Only	**2** Rotary Engines Only	**1 - 2**	**1 - 4**	**1 - 4** 8 injector drivers support 2 sequential stages on 4 cylinders	**1 - 4** 8 injector drivers support 2 sequential stages on 4 cylinders	**1 - 4** 8 injector drivers support 2 sequential stages on 4 cylinders	**1 - 4** 16 injector drivers support 2 sequential stages on 6 & 8 cylinders and 4 sequential stages on 4 cylinders	**1**	**1**
	Anti-Lag/Rotational Idle	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗
	Rolling Anti-Lag	✗	✗	✓ Fixed or current, RPM or road speed	✓ Fixed or current, RPM or road speed	✓ Fixed or current, RPM or road speed	✓ Fixed or current, RPM or road speed	✓ Fixed or current, RPM or road speed	✓ Fixed or current, RPM or road speed	✗	✗
	Launch Control	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓
	Traction Control	✗	✗	✓ Front vs Rear or individual wheel speed	✓ Front vs Rear or individual wheel speed	✓ Front vs Rear or individual wheel speed	✓ Front vs Rear or individual wheel speed	✓ Front vs Rear or individual wheel speed	✓ Front vs Rear or individual wheel speed	✗	✗
ADVANCED TUNING	**Tuning Table Resolution**	**16 x 16**	**16 x 16**	**32 x 32**	**32 x 32 x 8**	**32 x 32**	**32 x 32 x 8**	**32 x 32 x 8**	**32 x 32 x 8**	**32 x 32**	**32 x 32**
	4D Tuning Tables	✗	✗	✗	✓	✗	✓	✓	✓	✗	✗
	Per Cylinder Tuning Correction	**3D**	**3D**	**3D**	**3D**	**3D**	**3D**	**3D**	**3D**	**3D**	✗
	Wideband O2 (via external CAN expansion)	WBC1 or WBC2 Up to 2 Channels	WBC1 or WBC2 Up to 2 Channels	WBC1 or up to 4 WBC2 Up to 8 Channels	WBC1 + up to 4 WBC2 Up to 9 Channels	WBC1 or up to 4 WBC2 Up to 8 Channels	WBC1 + up to 4 WBC2 Up to 9 Channels	WBC1 + up to 4 WBC2 Up to 9 Channels	WBC1 + up to 4 WBC2 Up to 9 Channels	WBC1 or WBC2 Up to 2 Channels	WBC1 or WBC2 Up to 2 Channels
	K Type Thermocouples (Exhaust Gas Temperature) (via external CAN expansion)	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels	Up to 2 TCA2 & Up to 2 TCA4 Up to 12 Channels
	Engine Protection	✗	✗	**Advanced** Single Level	**Advanced** Multi-level	**Advanced** Single Level	**Advanced** Multi-level	**Advanced** Multi-level	**Advanced** Multi-level	**Basic** Single Level	**Basic** Single Level
RACE FUNCTIONS	**Nitrous Control**	✗	**1** Wet or Dry 3D fuel and ignition corrections. On/Off delays.	**1** Wet or Dry 3D fuel and ignition corrections. On/Off delays. Progressive control.	**Up to 6 Stages** Wet or Dry 3D fuel and ignition corrections per stage. On/Off delays. Up to 2 stages of progressive control. Banked control option.	**1** Wet or Dry 3D fuel and ignition corrections. On/Off delays. Progressive control.	**Up to 6 Stages** Wet or Dry 3D fuel and ignition corrections per stage. On/Off delays. Up to 2 stages of progressive control. Banked control option.	**Up to 6 Stages** Wet or Dry 3D fuel and ignition corrections per stage. On/Off delays. Up to 2 stages of progressive control. Banked control option.	**Up to 6 Stages** Wet or Dry 3D fuel and ignition corrections per stage. On/Off delays. Up to 2 stages of progressive control. Banked control option.	**1** Fuel and ignition corrections	**1** Fuel and ignition corrections
	Boost Control	**3D** Open loop & user definable axis eg boost by gear, road speed etc. 6 fully user definable corrections.	**3D** Open loop & user definable axis eg boost by gear, road speed etc. 6 fully user definable corrections.	**3D** Closed loop learning & user definable axis eg boost by gear, road speed etc. 6 fully user definable corrections.	**4D** Closed loop learning & user definable axis eg boost by gear, road speed, race timer, shock travel, ride height etc. 6 fully user definable corrections. Sequential turbo control.	**3D** Closed loop learning & user definable axis eg boost by gear, road speed etc. 6 fully user definable corrections.	**4D** Closed loop learning & user definable axis eg boost by gear, road speed, race timer, shock travel, ride height etc. 6 fully user definable corrections. Sequential turbo control.	**4D** Closed loop learning & user definable axis eg boost by gear, road speed, race timer, shock travel, ride height etc. 6 fully user definable corrections. Sequential turbo control.	**4D** Closed loop learning & user definable axis eg boost by gear, road speed, race timer, shock travel, ride height etc. 6 fully user definable corrections. Sequential turbo control.	**3D** Closed loop & User definable axis eg Boost by gear, road speed etc. 6 fully user definable corrections.	**2D** Closed loop eg boost by gear, road speed, etc.
	CO2 Boost, Wastegate Pressure & Position	✗	✗	✗	✓	✗	✓	✓	✓	✗	✗
	Intake Air Bleed Control (Charge pipe wastegate)	✗	✗	✗	✓	✗	✓	✓	✓	✗	✗
	Flat Shift	✗	✗	**Basic**	**Advanced** Strain gauge and position sensor (closed loop) for sequential transmissions	**Basic**	**Advanced** Strain gauge and position sensor (closed loop) for sequential transmissions	**Advanced** Strain gauge and position sensor (closed loop) for sequential transmissions	**Advanced** Strain gauge and position sensor (closed loop) for sequential transmissions	**Basic**	**Basic**
	Shock Travel and Ride Height	✗	✗	✗	✓ Logging and realtime user definable correction	✗	✓ Logging and realtime user definable correction	✓ Logging and realtime user definable correction	✓ Logging and realtime user definable corrections	✗	✗
	Timer Functions	✗	✗	1 User Defineable	Race Timer + 5 User Definable	1 User Defineable	Race Timer + 5 User Definable	Race Timer + 5 User Definable	Race Timer + 5 User Definable	✗	✗
	Trans Brake (Bump & Creep)	✗	✗	✗	✓	✗	✓	✓	✓	✗	✗
	Advanced Torque Management (ATM)	✗	✗	✗	✗ (Upgrade Available)	✗	✗ (Upgrade Available)	✓ Driveshaft RPM Target	✓ Driveshaft RPM Target	✗	✗