PLATINUM SPORT 2000

Fuel and Ignition Control System

System Description

The **HALTECH Platinum Sport 2000** is a powerful "real-time" programmable Engine Management system designed for those seeking optimum performance. The Sport 2000 has a total of 14 fuel and ignition outputs. Unused fuel and ignition outputs are available as auxiliary outputs. In addition, the Sport 2000 has 4 digital pulsed outputs, 7 analogue inputs, 4 digital inputs, closed loop idle control and dedicated outputs for stepper motor idle control.

With a large number of outputs available for controlling fuel and ignition, the Sport 2000 is well equipped to run modern engines with sequential fuel injection and multi-coil ignition systems.

The Sport 2000 can control most OEM coils and ignitors, as well as most aftermarket coils and ignitors.

Included with the Sport 2000 ECU, is the ECU Manager software package. The ECU Manager software exploits the Windows® graphical environment, to provide a user friendly interface to program the Sport 2000 ECU. It also allows access to adjust all settings and calibration maps. In addition the software is capable of displaying live data in the form of graphical gauges for easy viewing whilst connected to the ECU.

User Configurable Outputs:

- Closed loop idle speed (2 wire & 3 wire IAC)
- Electronic boost control
- Variable cam timing control
- Alternator control (Mazda)
- NOS enable
- Shiftlight
- Tacho (5v,8v,12v)
- Anti-lag
- Turbo timer
- Torque converter lock up
- Air con
- Load Switch
- Air Conditioner
- Intercooler water spray
- Closed loop 02 Sensor
- Rev Limiter
- Deceleration fuel cut
- Thermo-fan
- Engine Control relay
- Intercooler fan
- Aux. fuel pump
- Stall saver
- Staging signal
- VTECH
- VANOS (intake only)
- Dual intake valve
- Extra Injector
- RPM Switch
- TPS Switch

(not all functions are available at the same time)

The Sport 2000 System has adjustable fuel maps each with 32 load bars and 32 RPM ranges. The Sport 2000 will run up to 16000 rpm while maintaining excellent accuracy and resolution.

Typical Applications:

- Conversion from carburetion to fuel injection
- Control of fuel injection/ignition on modified engines
- Race and rally applications of all descriptions
- Design and development purposes
- Educational use by universities and colleges
- Original equipment in cars and motorcycles

Platinum Sport 2000 Features:

- Suitable for controlling Piston engines: 1,2,3,4,5 6,8,10 and 12 cylinders
- Rotary Engines: 2 & 3 rotors
- Max Operating RPM: 16000
- Variable RPM range map Points

Trigger Signal Type:

- Hall Effect Sensor
- Optical Sensor
- Inductive Magnetic Reluctor

Trigger Patterns:

- Single Pulse Per Cylinder
- Multi-tooth
- Bosch Motronic
- Ford
- GM
- Honda
- Mazda
- Mitsubishi
- Nissan Optical
- Subaru
- Toyota
- VW

Ignition Configuration:

- Single Distributor
- Twin Distributor
- Direct Fire Wasted Spark
- Direct Fire Coil on plug
- Ignition toggle support for Rotary engines

Injector Firing Mode:

- Sequential
- Multi-Point
- Throttle Body (Batch)
- Staged

ECU Inputs:

- Crank Position Sensor
- Cam Position Sensor
- MAP Sensor (1,2,3,4,5 Bar)
- Throttle Position (potentiometer type)
- Coolant Temperature
- Air Temperature
- Barometric Pressure
- Oxygen Sensor
- Road Speed
- Analogue Voltage Inputs (x7)
- Digital Switched Input (x1)
- Digital Pulsed Input (x3)

ECU Outputs:

- Injector Drivers: 12 Up to 12 injector Outputs
- Ignition Drivers: Up to 6 ignition outputs
- Fuel Pump Relay Control
- Digital Pulsed outputs (x4)
- Idle air control (IAC)

Data Storage Features:

- Map Storage and Retrieval
- Laptop Data Logging
- 448kb of on board data logging

Installation Accessories:

- Flying lead wiring loom with 4 power relays
- Communication USB Cable
- Programming software on CD
- Instruction Manual on CD
- Air Temp Sensor
- Coolant Temp Sensor
- Map Sensor
- Throttle Position Sensor

Optional Accessories:

- Boost/Fuel/Ignition trim module
- Idle air control motor
- Oxygen sensor
- Electronic boost control solenoid
- Ignition modules
- Ignition coils
- Wideband controller and gauge
- Dash
- EGT Kit

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Specifications

Engine Suitability

Up to 16,000 rpm | 1, 2, 3, 4, 5, 6, 8, 10, 12 cylinders | 2 - 3 rotors
Normally aspirated or supercharged.
Load sensing by throttle position or manifold pressure.
Multipoint, Batch, Staged or Sequential injection patterns.
Distributor ignition systems, or direct fire systems with 1 to 6 coils.

Power Requirements

Power Source: 8.6 to 16.5 Volts DC
Consumption
Haltech ECU: 300 mA at 12 Volts
Injector Load: Dependent on injector type. Approx. proportional to injector duty cycle. (Typically 0.6 Amps per injector)

Physical Specifications

ECU DIMENSIONS: Length: 160mm, Width: 104mm, Depth: 39.75mm
WEIGHT: ECU: 400g (0.88 lb), Loom: 2.2kg (4.85 lb),

Internal Input Sensors

MANIFOLD ABSOLUTE PRESSURE (MAP)
Rated to 150kPa (up to 1.5 Bar or 22 psi boost)

External Input Sensors (supplied at extra cost)

MANIFOLD ABSOLUTE PRESSURE (MAP)
1 Bar -100kPa to 0kPa (Naturally Aspirated)
2 Bar -100kPa to 100kPa (up to 1 Bar or 15 psi boost)
3 Bar -100kPa to 200kPa (up to 2 Bar or 30 psi boost)
4 Bar -100kPa to 300kPa (up to 3 Bar or 45 psi boost)
5 Bar -100kPa to 400kPa (up to 4 Bar or 60 psi boost)

TEMPERATURE SENSORS (Air and Coolant)
NTC temperature dependent resistor type.
Operating Range
Continuous -40°C to 100°C (-40°F to 212°F)
Intermittent up to 125°C (257°F)
THROTTLE POSITION SENSOR: 10k rotary potentiometer driven from throttle shaft.
INTERNAL BAROMETRIC PRESSURE SENSOR
ENGINE SPEED PICKUP: Compatible with most trigger systems:
5, 8 or 12 volt square wave;
Pull-to-ground (open collector)
INTERNAL RELUCTOR ADAPTOR for magnetic (or 'reluctor') triggers.
Support for most standard tooth patterns.

ECU Outputs

INJECTOR DRIVER: Up to 12 low-impedance (ie:1-3Ω) injectors or up to 16 high-impedance (ie:above 8Ω) injectors. (Expandable using optional Driver Box.)
IGNITION OUTPUT: Up to 6 ignition outputs to control all transistor style ignition modules and external CDI Units.
DIGITAL PULSED OUTPUT: 4 Dedicated Digital pulsed outputs. Suitable for controlling turbo wastegate, shift lights, etc.
SPECIAL PURPOSE DIGITAL OUTPUT: Up to 9 special purpose digital outputs depending upon number of channels required to operate the engine.12Volt logic outputs suitable for switching fans, shift lights, anti-lag, NOS,PWM style outputs, Extra injector outputs, etc.
FUEL PUMP CONTROL: 20A fused relay, features automatic priming and switch-off.

System Programming Requirements

COMPUTER: PC Running Windows 2000 SP4 / XP / Vista, (preferably laptop or notebook), 1GHz processor, 256Mb RAM, 128Mb graphics card with 3D acceleration, USB 1.1, 250Mb of free Hard disk space, CD-ROM Drive.

Adjustable Features

BASE FUEL MAP: 32 RPM ranges to 16,000rpm, 32 Load points per range, (with programmable ranges) up to 32ms with 6.4us resolution.
IGNITION MAP: 32 RPM ranges, RPM to 16,000rpm, 32 Load points per range (with programmable ranges), up to 60° advance, with 0.2° resolution
CORRECTION MAPS
FUEL:
- Barometric – 32 points
- Cold Start Prime – 2D
- Coolant Temp. Enrichment - 3D - 8x8 points
- Air Temperature Adjustment – 3D - 8x8 points
- Battery Voltage Correction – 2D - 32 points
- Closed Throttle 2D - 32 points
- Full Throttle 2D - 32 points
- Post Start 3D – 8x8 points
- End of injection 2D - 32 points
- Staged Injection Angle Split Map 2D – 32 points
- Staged Injection Map 2D – 32 points
- Individual Cylinder Trimming +/- 100%
- EGT Correction 2D – 32 points

IGNITION:
- Crank Advance 2D - 32 points
- Coolant Temperature Advance/Retard 2D - 32 points
- Air Temp. Advance/Retard 3D 8x8 points
- Individual Cylinder Trimming +/- 20°

PROGRAMMABLE REV-LIMIT: Selectable as either fuel or ignition, hard or soft cut.
FUEL CUT ON DECELERATION
THROTTLE ENRICHMENT: Instantly adds extra fuel pulses when required.
IDLE SPEED CONTROL: Target Idle Speed, Cold Idle-up RPM, Post-start RPM setting.
CLOSED LOOP O2 CONTROL: With both cruise and idle settings.
CLOSED LOOP BOOST CONTROL: Map boost target according to RPM.
VANOS CONTROL: (Intake Only)
VARIABLE CAM TIMING CONTROL.
ANTI-LAG : Rally and Launch Modes

Miscellaneous

DATA LOGGING:Storage for approximately 2 minutes at 200 logs per second, 6 channels of data. 40 minutes at 10 logs per second, 6 channels, 7 hours at 1 log per second, 6 channels.
REAL TIME PROGRAMMING: Instant, hesitation free adjustment while engine is running.
CAN COMMUNICATION with AIM / Race Pak Dash
ECU can be Password Protected in software.
RUGGED ALUMINIUM CASING: Anodised

Optional

IGNITION COILS: Dual pack and LS1 Style
OPTIONAL IGNITION MODULE WITHOUT DWELL CONTROL: Available as single, dual and triple igniters.
OPTIONAL MIXTURE / IGNITION / BOOST TRIM MODULE
Provides ±12½%, ±25% or ±50% injection time adjustment for fast tuning.
Provides ±5°, ±10° and ±12.5° ignition advance adjustment for fast tuning.
Provides 0 - 100% boost trim adjustment.
Optional Boost Control Solenoid.
Optional Crank / Cam Trigger Kit.
Optional Extra Injector Driver Kit.
Optional Four Wire Heated Oxygen Sensor.
Optional Idle Air Control Motor Housing.
Optional Idle Air Control Motor.