



## Overview

The VBOX Mini is a low cost, self-contained GPS data logging and display system suitable for a large range of vehicle testing applications.

Using a high performance GPS engine, data such as velocity and position are accurately recorded at 10Hz.

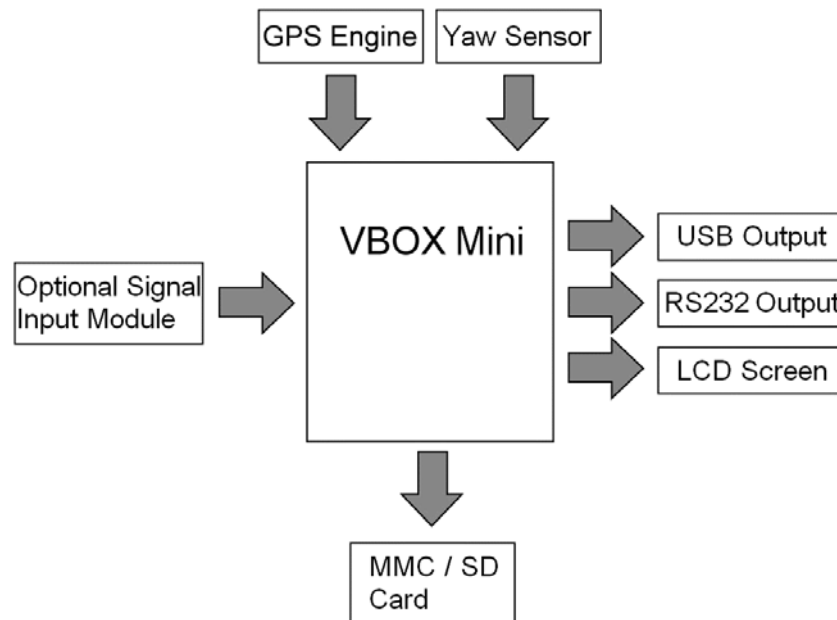
To further enhance the VBOX Mini, an optional Input/Output module is available for collection of data from external signal sources such as throttle position or engine RPM.

In addition to the data recorded onto the flash memory card, data from the VBOX Mini can be output via a direct PC link in real time for live viewing in the included VBOXTools software.



## Features

- Non-contact 10Hz speed and distance measurement using GPS
- Internal yaw rate measurement for slip angle and true heading
- RS-232 serial interface
- USB interface
- Data logged to popular MMC / SD cards
- Optional input module available for logging of additional analogue and digital signals



VBOX Mini Input & Output



## GPS

### Velocity

Accuracy	0.2 Km/h
Units	Km/h or Mph
Update rate	10 Hz
Maximum velocity	1000 Mph
Minimum velocity	0.1 Km/h
Resolution	0.01 Km/h

### Absolute Positioning

Accuracy	2.5m	95% CEP**
Update rate	10 Hz	
Resolution	1 cm	

### Heading

Resolution	0.01°
Accuracy	0.2°

### Acceleration

Accuracy	1%
Maximum	4 G
Resolution	0.01 G
Update rate	10 Hz

### Memory

<b>MMC / SD Card</b>	Dependent on card capacity*
Recording time	

### Distance

Accuracy	0.05% (<50 cm per Km)
Units	Metres / Feet
Update rate	10 Hz
Resolution	1 cm
Height accuracy	10 Metres 95% CEP**

### Time

Resolution	0.1 s
Accuracy	0.1 s

### Power

Input Voltage range	6v-28v DC
Current	Typically 100 mA

### Environmental and physical

Weight	225 grams
Size	113 mm x 63 mm x 93 mm
Operating temperature	-20°C to +50°C
Storage temperature	-30°C to +80°C

### Definitions

\*\* CEP = Circle of Error Probable  
95% CEP (Circle Error Probable) means 95% of the time the position readings will fall within a circle of the stated diameter

\* Approximately 1.2Mb per hour used when logging GPS

## Outputs

### RS232 / USB

Output Data Rate	10Hz direct / 5Hz via radio
Data available	Satellites in View, Latitude, Longitude, Velocity, Heading, Altitude, Vertical Velocity, Distance, Longitudinal Acceleration & Lateral Acceleration, Slip Angle, True Heading

### LCD Display

Performance Mode	0-60, 0-100, 2 x User Defined Acceleration Range, 0-XXX-0 (User Defined), Maximum Velocity, Average Velocity, Peak Longitudinal Acceleration, 2 x User Defined Deceleration Range, Time to and Speed at (100m, 200m, 400m, 1km, 1/8mile, 1/4 mile, 1/2mile, 1mile). Minimum apex speed.
Lap Timing Mode	Current Lap Time, Best Lap Time, Last Split Time, Speed at Split, Minimum Speed, Logged Lap and Split Time Review
Drift Mode	Drift Angle, Speed, Peak Drift Angle, Speed at Peak Drift, Current Sector, Sector Score, Total Score, Peak Longitudinal Acceleration, Average Speed
Speed Display / POI Mode	Current Speed, Average Speed, Local Point Of Interest

## Inputs

### Input Module

Ready for connection to optional input module accessory, to allow measurement and logging of analogue and digital input data such as engine RPM and throttle position