

Video VBOX Pro

Video VBOX Pro combines a powerful GPS data logger with a high quality multi-camera video recorder and real-time graphics engine.

Multi Camera Recording

Taking up to four waterproof cameras and combining them with a customisable graphical overlay, **Video VBOX Pro** streams video onto a flash card or USB stick as a DVD quality MPEG4 file.

High Accuracy Data Acquisition

A 10Hz GPS engine provides parameters such as circuit position, lap timing, speed (accurate to $\pm 0.1\text{km/h}$), and acceleration. The optional 32-channel CAN interface retrieves vehicle data such as throttle angle, RPM, and brake pressure.

Suitable for many applications

The rugged portability and functionality of **Video VBOX Pro** means that it's ideal for a variety of applications from automotive testing, to motorsport, driver training, and industrial applications. Whether you need a system for race recording and analysis, or for development and verification of Advanced Driver Assistance systems – **Video VBOX Pro** offers a new dimension to data logging.













Intuitive Software

The setup software supplied with the system allows you to choose standard dashboard styles and maps or customise your own. The **Performance Tools** software provides an intuitive way to analyse the data recorded by the system alongside the video.

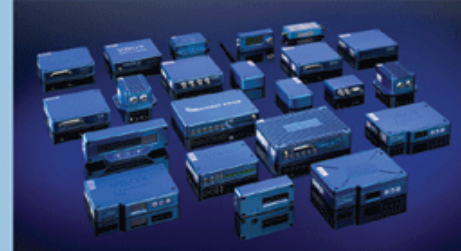
Using **Video VBOX Pro** is quick and easy. Simply connect the cameras and the GPS antenna, insert the SD card or USB stick, and go.



Features

-  Built in 10Hz GPS engine
-  CAN interface for acquiring vehicle data
-  SD Card / USB Stick logging
-  2 x Mono audio input
-  4 camera inputs with configurable views
-  Cameras waterproof and dust protected: IP67 rating
-  Robust and lightweight anodised aluminium enclosure with high quality Lemo connectors
-  MPEG4 encoding – approx 2GB per hour DVD quality
-  User configurable real-time graphic overlays, including gauges, bar graphs, circuit plots, lap times, and text.
-  Enables logging even when power is disconnected for up to 10 seconds
-  USB 2.0 and RS-232 serial interface
-  Compatible with Racelogic modules to log information such as RPM even in vehicles without CAN.





Left: Example screenshot of a Vehicle Separation Application, using two cameras.



Right: Example screenshot of a Lane Departure Warning Application, using three cameras.

Package Options and Contents

Video VBOX Pro Unit Options

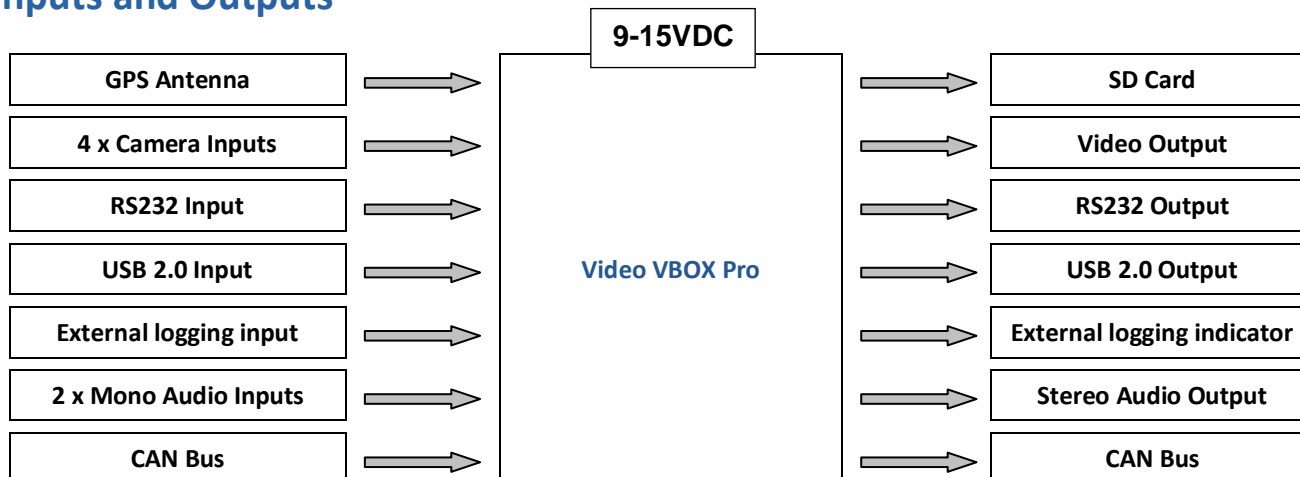
GPS Engine	10Hz
Bullet Cameras	1 / 2 / 4
CAN Logging	1 Channel / 32 Channels

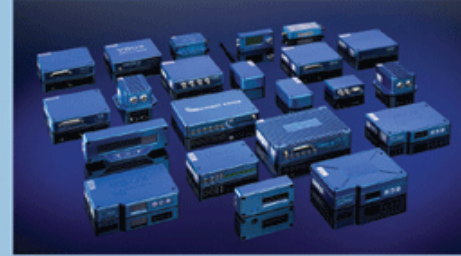
All Units Supplied With

- Large flight case
- USB Cable
- GPS Magnetic Antenna
- 1, 2 or 4 Cameras
- 2 microphones
- 2GB SD Card
- Windscreen camera mounts
- Mains power supply
- Cigar lighter power supply
- Video VBOX Scene Set-Up customisation software CD
- Performance Tools Data Analysis software CD
- VBOX Tools Data Analysis software: downloadable after unit registration.



Inputs and Outputs





Specification

Video Standard

MPEG-4 advanced simple profile at level 5

Recording Options

Record only when moving (default)
Continuous record
Record start/stop via front panel
Record start/stop via optional remote switch
User configurable logging (i.e. set to resume logging when certain GPS parameters are reached)

Camera Inputs

4 x AV camera inputs with integrated 12v power supplies
Picture in pictures automatically selected when additional cameras detected
"Camera OK" indicator over each camera input

* HQ1 Cameras are rated IP67. An IP67 rating means the camera has total dust ingress protection, and is also protected against immersion up to 1m depth.

Graphics

24bit colour plus per pixel alpha blending
Virtually unlimited number of gauges, g-plots, bar graphs, track maps, text and images
Choice of internal GPS parameters, external CAN/Serial parameters, or both simultaneously.
Standard library of gauges, fonts etc.
User definable gauges, fonts etc.
Alerts – text and images can change when a parameter is over/under the desired limit

Resolution Options

DVD 720 x 576 at 25 frames per second PAL (default)
DVD 720 x 480 at 30 frames per second NTSC

Sound

2 x external mono microphone connections, mixed and recorded as mono audio in video file.
MP2 (MPEG1 Layer II) encoded into video stream

Compression Options

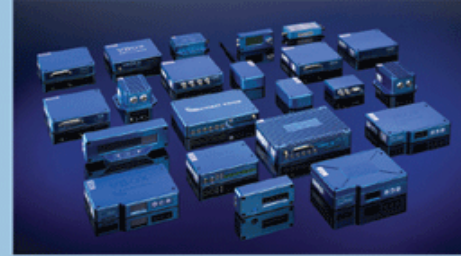
User selectable levels of quality
Can support maximum data rate up to 10Mbit/s (variable)

Storage Options

SD card
(For Max and Super quality settings, a fast SD card such as San Disk Extreme III is required.)
Optional USB adaptor for USB flash drives

Software

Video VBOX Set-Up Software: Windows configuration software for screen layout, custom gauges, recording options.
Performance Tools: Data Analysis software, inc video integration. (VBOX Tools available for download after unit registration.)



GPS Parameters

The Following GPS parameters can be used to drive gauges, bar graphs, circuit maps and text:

- Track position
- Speed
- Distance
- Lateral and longitudinal acceleration
- Radius of turn
- Heading
- Time
- Height and vertical velocity

GPS Accuracies

Update Rate	10Hz
Speed	±0.2km/h
Position	±5m 95% CEP **
Accuracy with SBAS DGPS (EGNOS – Europe, and WAAS – USA)	N/A
Accuracy with local DGPS (Base Station)	N/A
Accuracy with local differential upgrade	N/A
Height	±10m 95% CEP **
Lateral Acceleration	±0.5%
Longitudinal Acceleration	±0.5%
Radius of Turn	±5cm
Distance	±0.05%

** 95% CEP (Circle Error Probable): 95% of the time the position readings will fall within a circle of the stated radius.

Auxiliary Inputs

Digital Input	Used for external start / stop logging switch
CAN	Baud rate and message structures completely user programmable, .dbc files available on request
RS232	Custom streams can be accommodated – send enquiries to Racelogic. Also connects to Racelogic DriftBox to obtain drift angle which can be used as data source for onscreen graphics and logged to .vbo file
USB	For external flash drives, Camera/graphics set-up and preview, SD card reading and setting parameters via PC

Outputs

PAL/NTSC	Composite video output
Audio	Mono audio output (mix of the audio from microphones on camera 1 and camera 2)
Digital	External logging indicator

Environmental and Physical

Input Voltage	9-15VDC
Power	11.6W for complete system including cameras
Size	170mm x 122mm x 33mm (excluding cameras)
Weight	Approximately 700 grams (excluding cameras)
Enclosure	Milled Aluminium
Operating temp	-10°C to +60°C
Storage temp	-40°C to +85°C

Hardware/Software Support

One Year Hardware / Lifetime Software Support Contract	Lifetime Software Support Contract is valid for a minimum of 5 years from date of purchase and limited to original purchaser. Includes tel/email support provided by local VBOX distributor and firmware/software upgrades where applicable.
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