Video VBOX Pro

RLVD10P2P/RLVD10P2PV/RLVD10P4PV/RLVD20P2PV/RLVD20P4PV

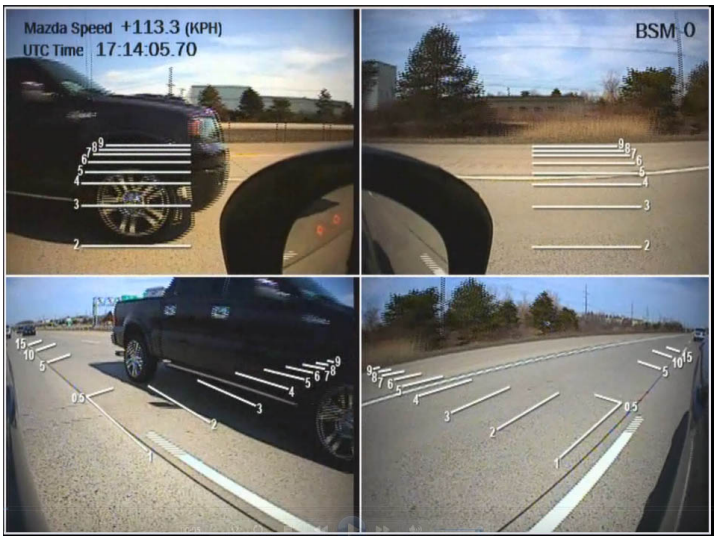
Video VBOX Pro combines a powerful GPS data logger with a high-quality multi-camera video recorder and real-time graphics engine.

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 MPEG-4file.

High Accuracy Data Acquisition

A choice of either 10 Hz or 20 Hz GPS engines provides parameters such as circuit position, lap timing, speed (accurate to ±0.1 km/h), and acceleration. The optional 32-channel CAN interface retrieves vehicle data such as throttle angle, RPM, and brake pressure.



Video VBOX 4 camera system used to test Blind Spot Detection

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 **VBOX Test Suite** 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/ 20Hz GPS data logger
- 4 camera inputs with configurable picture in picture
- Powerful yet intuitive graphics customisation and analysis software.
- 580L and 420L Bullet Cameras
- 8 CAN channels (upgrade for 32 channels available)
- USB / SD Card logging and USB 2.0 interface
- Stereo Audio recording
- MPEG4 encoding – approx. 2GB per hour DVD quality, PAL or NTSC format
- Customisable real-time graphics, including gauges, bar graphs, circuit plots, lap times, and text
- Preview over USB for camera and graphics set-up
- Robust, light aluminium enclosure with internal battery: keeps logging even when power lost for up to 10 s
- Compatible with Racelogic input modules to log RPM and analogue inputs even in vehicles without CAN

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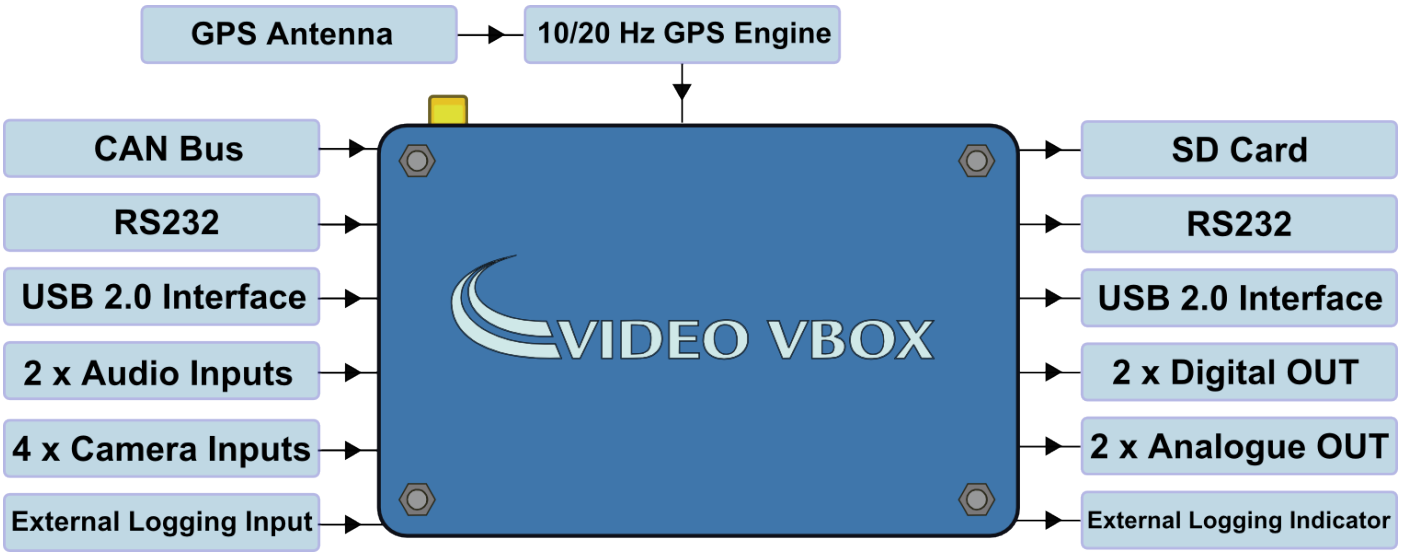
Inputs and Outputs



Inputs	Outputs
4x Camera Inputs Integrated 12 V power. Picture-in-picture automatically selected when additional camera is detected.	**SD Card** 8 GB card supplied with device
2x Audio Inputs	**Video Output**
RS232 Custom streams can be accommodated (send enquiries to support@racelogic.co.uk)	**Stereo Audio**
USB Video streaming for camera set-up & preview. SD card reading and setting parameters via a PC	**RS232**
CAN Bus Allows user to log vehicle CAN data: 8 Channels. Upgradeable to 32 CAN Channels.	**USB 2.0 Interface** Video streaming for camera set-up & preview. SD card reading and setting parameters via a PC
External Logging Input	**External Logging Indicator**

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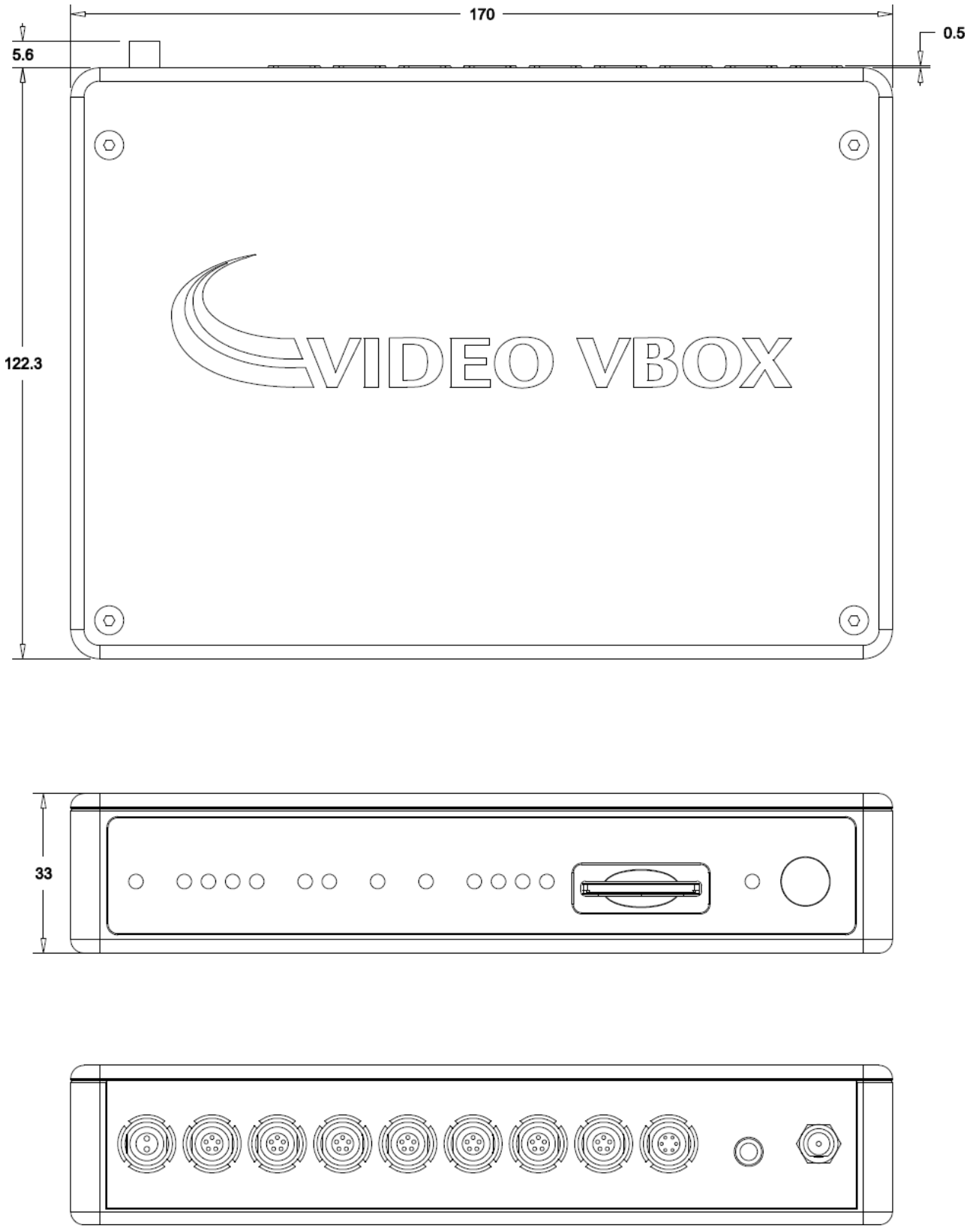

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GPS Specifications

10Hz system (All data recorded at 10Hz)

Velocity		Distance	
Accuracy	0.1 Km/h (averaged) over 4 samples	**Accuracy**	0.05 % (<50cm per Km)
Units	Km/h or Mph	**Units**	Metres / Feet
Update rate	10 Hz	**Resolution**	1 cm
Maximum velocity	1600 km/h		
Minimum velocity	0.1 Km/h		
Resolution	0.01 Km/h		
Latency	<160ms		

Position		Acceleration	
2D Position	±3m 95% CEP *	**Accuracy**	1 %
Height	10 Metres 95% CEP *	**Maximum**	4 G
		Resolution	0.01 G

Heading		Lap Timing (OLED/ Circuit Tools)	
Resolution	0.01°	**Resolution**	0.01 s
Accuracy	0.1°	**Accuracy**	0.01 s **

20Hz system (All data recorded at 20Hz)

Velocity		Distance	
Accuracy	0.1 Km/h (averaged over 4 samples)	**Accuracy**	0.05 % (<50cm per Km)
Units	Km/h or Mph	**Units**	Metres / Feet
Update rate	20 Hz	**Resolution**	1 cm
Maximum velocity	1600 km/h		
Minimum velocity	0.1 Km/h		
Resolution	0.01 Km/h		
Latency	<41.5ms		

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Position		Acceleration	
2D Position	±2.5m 95% CEP *	**Accuracy**	0.5 %
Height	6 Metres 95% CEP *	**Maximum**	4 G
Accuracy with SBAS DGPS	<1m 95% CEP *	**Resolution**	0.01 G
Accuracy with local DGPS (BaseStation)	40cm 95% CEP *		
Accuracy with local differential upgrade	20cm 95% CEP *		

Heading		Lap Timing (OLED/ Circuit Tools)	
Resolution	0.01°	**Resolution**	0.01 s
Accuracy	0.1°	**Accuracy**	0.01 s **

Definitions

* CEP = Circle of Error Probable - 95% CEP means 95% of the time the position readings will fall within a circle of the stated radius

** Not using DGPS and crossing the start/finish line at 100km/h

Graphics, Sound and Storage

Recording Options
Record only when moving (default); Continuous record; Record start/stop button; Record activated by external signal e.g. CAN wheel speed.

Graphics
24bit colour plus 256 levels of alpha transparency
Virtually unlimited number of gauges, g-plots, bar graphs, track maps, text and images
Choose from the internal GPS parameters or external CAN/Serial parameters
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

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Sound
External microphone connection
MP2 (MPEG1 Layer II) encoded into video stream
Stereo audio output with automatic gain control + Line level input

Compression Options
3 levels of quality – High (default), Medium and Low
Depending on content, rates typically 2MB/s, 0.5MB/s or 0.25MB/s for full frame DVD

Memory usage
For full quality DVD using MPEG-4 set to High quality. Uses approx. 2GB/hr

Storage Options
SD card (Fast SD card required for Max and Super quality settings)
Optional USB adaptor for USB flash drives

Environmental and Physical

Environmental and Physical			
Input Voltage	9 – 15 V (12 V minimum required for recording)	**Size**	170mmx122mmx33mm
Power	7.2 W Max	**Weight**	700 g
Operating temperature	-10°C to +60°C	**Storage temperature**	-40°C to +85°C

Software

Windows software
Video VBOX Setup: Configurable software for customising scenes
Circuit Tools / VBOX Test Suite: Data analysis software

Support	
Hardware	One Year Support Contract
Software	Lifetime Support Contract: Valid for a minimum of 5 years from the date of purchase and limited to the original purchaser. Contract includes: telephone/ email technical support provided by local VBOX Distributor and firmware/ software upgrades (where applicable).

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Package Contents

(20 Hz, 4-camera system example – RLVD20P4V)

Description	Product Code
1 x Video VBOX Pro (with full VCI)	VD20PV
1x Cigar plug power cable (2 m)	RLCAB010LE
1x Unterminated power supply (2 m)	RLCAB015L
1x Country-specific mains power supply	RLVBACS020
1x External GPS Antenna (5 m cable)	RLVBACS018
1x 8 GB SD Card	RLACS259
1x USB configuration cable (2 m)	RLCAB072
4x Sony 580TVL cameras - inc. light weight suction mounts	RLACS140
2x Forward facing camera mounting ring	RLACS116
2x Dual mono Microphone (2.5 m lead)	RLACS133
1x Stereo Audio Input Splitter	RLACAB095
1x Carry Case	RLACS117