Video VBOX Pro

RLVD10P2P/RLVD10P2PV/RLVD10P4PV/RLVD20P2PV/RLVD20P4PV

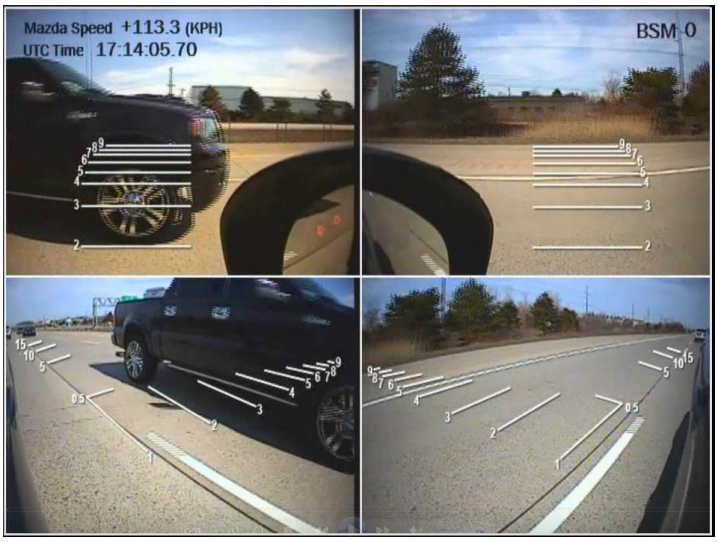
Video VBOX Pro combines a powerful GPS data logger with a high quality multi-camera video recorder and real-time graphics engine.

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 10Hz or 20Hz GPS engines provides parameters such as circuit position, lap timing, speed (accurate to ±0.1km/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 **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/ 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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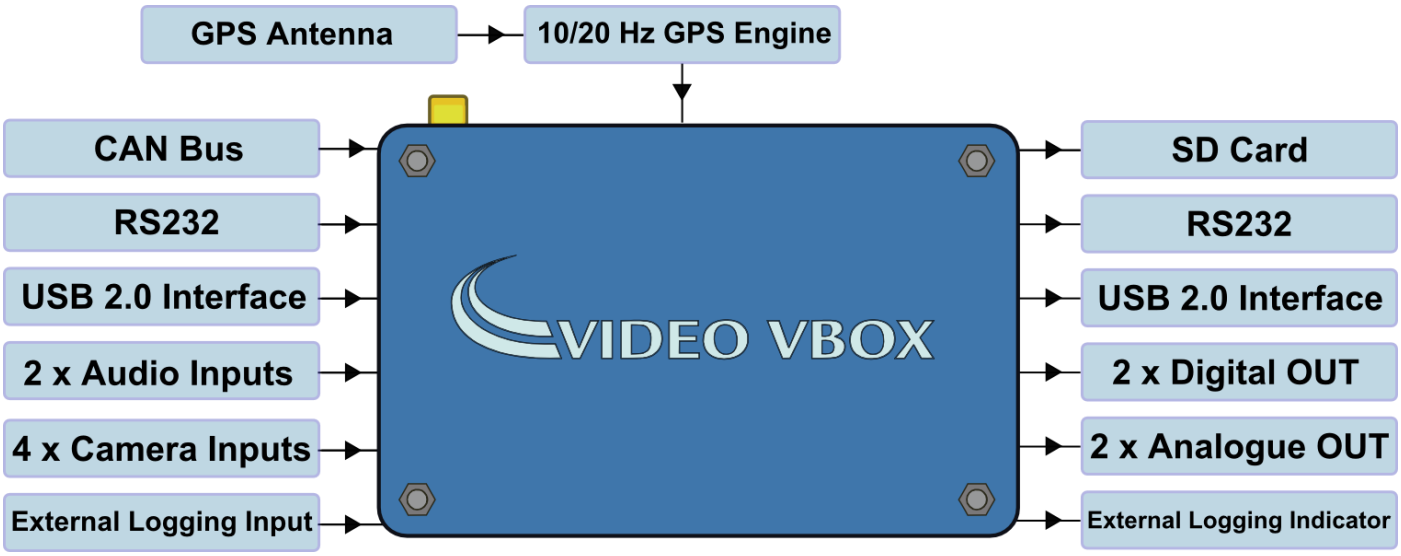
Inputs and Outputs



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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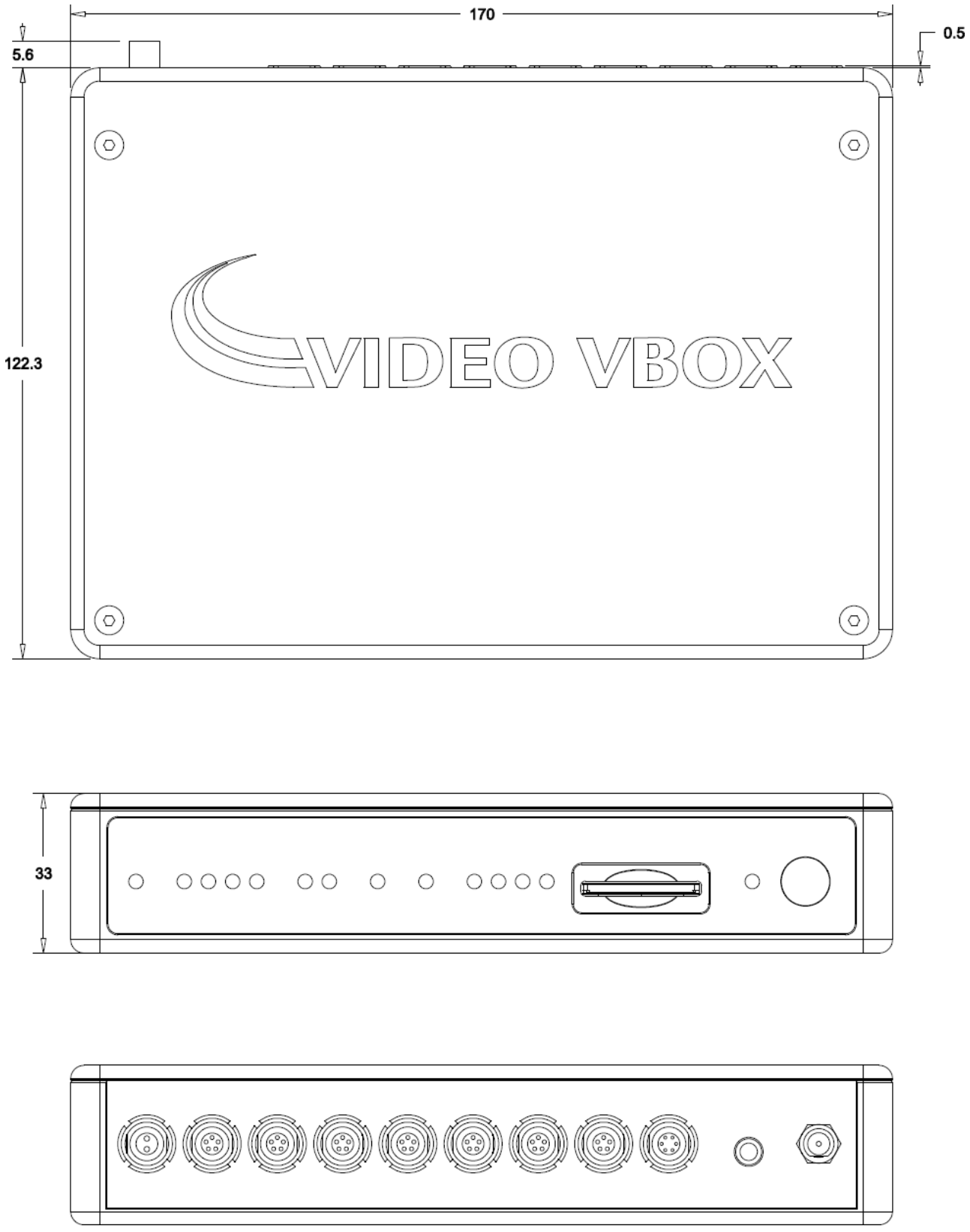

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GPS Specifications

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 Tools available after registration): 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

(20Hz 4 camera system)

Description	Product Code
1 x Video VBOX Pro (with full VCI)	RLVD20PV
1x Cigar plug power cable (2m)	RLCAB010L
1x Unterminated power supply (2m)	RLCAB015L
1x Mains power supply	RLVBACS020
1x External GPS Antenna	RLVBACS018
1x 8 GB SD Card	RLACS259
1x USB 2 meter lead	RLCAB072
4x Sony 580TVL cameras - inc. light weight mounts	RLACS140
2x Forward facing camera mounts	RLACS116
2x Dual mono Microphone (2.5m lead)	RLACS133
1x Stereo Audio Input Splitter	RLACAB095
1x Carry Case	RLACS117