VBOX Video HD1

RLVBHD1



VBOX Video HD1 is a compact, rugged, single-camera video data logging system featuring 25 Hz GNSS data logging and a real-time graphical overlay. Intended for the club-level and prosumer motorsport markets, VBOX Video HD1 records synchronised GNSS, CAN, and video data in stunning 1080p high definition. H.265 compression ensures excellent video quality with efficient storage use.

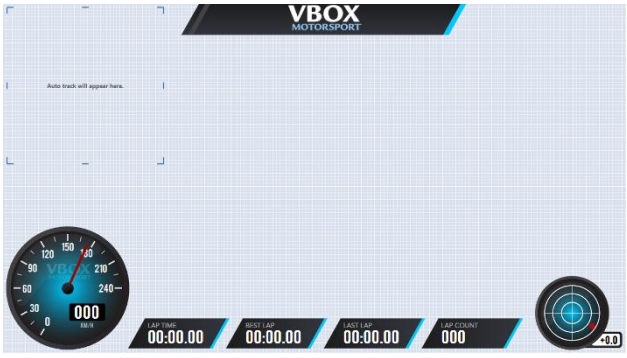


The live video output via HDMI allows you to stream real-time video and audio to a HDMI compatible device. This is ideal for live coverage of motorsport events for TV or social media and provides race teams with the ability to give instant driver feedback.

The VBOX Video preview app for Android and iOS devices connects via the built in Wi-Fi to allow fine-tuning of camera's settings, with real-time camera output being displayed on the mobile device's screen.

Graphics are overlaid in real-time and in high definition. This gives the user great scope for fantastic dashboard and gauge layouts. The graphics are fully customisable, and several default scenes are available.

By default, the system will start and stop logging according to GPS speed. The addition of a video pre-buffer allows every moment of track action, including race starts, to be captured automatically.



VBOX Video HD1 is compatible with the Racelogic OLED display, and Racelogic modules such as the Micro Input Module. VBOX Video HD1 also supports CAN and CAN FD input via VCI (Vehicle Communication Interface).

Features

- Single Camera, 1080p 30 fps video recording
- H.265 (HEVC) compression with dynamic bit rate
- 25 Hz GNSS data logging (multi-constellation)
- Real-time, high-definition graphic overlay
- Up to 80 CAN channel inputs (2x CAN FD buses)
- Predictive Lap Timing (with OLED display)
- Track database with auto track map
- 5 GHz Wi-Fi for camera preview
- Bluetooth (reserved for future updates)
- Internal and external microphone support
- Video pre-buffer (up to 30 seconds)
- Narrow (66°), Normal (92°), and Wide (132°) field of view modes
- HDMI 1.3 output
- Accelerometer for auto screen orientation
- FAT32 and exFAT SD card support



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Inputs and Outputs





Inputs	Outputs
Single integrated camera FOV: 66° (narrow) / 92° (normal) / 132° (wide) **Audio** Internal microphone External microphone / line-in intercom option (coming soon) **Bluetooth** Reserved for future software updates **RS232** For communication with OLED Display **CAN Buses** Up to 80 CAN signals in total Both buses are CAN 2.0 and CAN FD compatible **GNSS Antenna** Integrated multi-constellation antenna Optional external GNSS antenna support (SMA)	**Micro HDMI Video Output** HDMI with video, audio, and graphics overlay Max. 1920 x 1080 **SD Card** Fast 32 GB card supplied with device FAT32 and exFAT supported **Wi-Fi (2.4GHz)** For camera setup / preview via mobile app **RS232** Bidirectional link to OLED Display **CAN Output** Racelogic message set output

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GNSS Specifications

Velocity		Distance	
Accuracy	0.1 km/h (averaged over 4 samples)	**Accuracy**	0.05 % (<50 cm per km)
Units	km/h or mph	**Units**	metres / feet
Update rate	25 Hz	**Resolution**	1 cm
Maximum velocity	1800 km/h		
Resolution	0.01 km/h		

Position		Acceleration	
2D Position	±2 m 95 % CEP[1]	**Accuracy**	1 %
Height	±4 m 90 % CEP[1]	**Maximum**	4 g
		Resolution	0.01 g

Heading		Lap Timing (OLED/ Circuit Tools)	
Resolution	0.01°	**Resolution**	0.01 s
Accuracy	0.3°	**Accuracy**	0.01 s[2]

Definitions

[1] CEP = Circle of Error Probable – 95 % CEP means 95 % of the time the position readings will fall within a circle of the stated radius

[2] Not using DGPS and crossing the start/finish line at 100 km/h

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Graphics, Sound and Storage

Recording Options

- Record only when moving (default)
- Continuous record
- Manual record via button
- Advanced logging controls triggered based on signal logic

Video Pre-Buffering

- Up to 30 seconds of video pre-buffering provided, configurable in software.
- Default setting: 10 seconds

Graphics

- 24-bit colour with 8-bit alpha transparency
- User-customisable graphics including dial gauges, g-plots, bar graphs, track maps, text, and images
- Choose from the internal GPS parameters or external CAN/Serial parameters
- Alerts: Text and images can change when a parameter is over/under the desired limit

Video Encoding

- H.265 (HEVC) codec with variable bit rate
- 30 fps mode: approx. 2.5 MB/s
- Typical values – can vary according to conditions

Memory usage

- 8.5 GB per hour in normal conditions.

Storage Options

- SD card (Class 10, >50 MB/s recommended)
- FAT32 and exFAT file systems supported

HDMI Output

- HDMI 1.3 with EIA/CEA-861-D video format support
- Audio: 2-channel LPCM, 16-bit, 48 kHz



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Environmental and Physical

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Input Voltage	6 – 18 V DC	**Size**	71 x 65 x 52 mm
Power	6 W Max	**Weight**	167 g (approx.)
Operating temp.	-20°C to +60°C	**Mounting**	3x 1/4"-20 UNC holes
Storage temp.	-20°C to +85°C	**Body**	Fibreglass reinforced plastic
Water Resistance	Splash proof / light rain resistant	**Lens Protector**	Replaceable toughened glass
Dimensions			

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Connectors and Pinouts

Connector 1 (HR30 6-pin)		Connector 2 (HR30 6-pin)		Connector 3 (HR30 3-pin)	
Pin	Function	Pin	Function	Pin	Function
1	RS232 Rx	1	RS232 Rx	1	Audio In
2	RS232 Tx	2	RS232 Tx	2	Mic Bias
3	GND	3	GND	3	Audio GND
4	CAN Low	4	CAN Low		
5	CAN High	5	CAN High		
6	Power	6	Power		

Software

Windows Software
• **VBOX Video Setup:** Configuration and custom scene creation • **Circuit Tools:** Circuit analysis software • **VBOX Test Suite:** Data analysis software (requires registration)

Package Contents

RLVBHD1: Full System

Description	Product Code
VBOX HD1 Unit	VBHD1-V1
Power & CAN interface - 6W Hirose Plug Overmold to Unterminated Cable (3.5 m)	RLCAB235
32 GB SD Card (Class 10, UHS-1)	RLACS231
GPS/GLONASS/Galileo Low Profile Antenna with SMA (3 m)	RLACS262
HD1 Roll Cage Mount	RLACS380