

# CERTIFICATE OF CALIBRATION



Customer	VBOX JAPAN	Equipment	100Hz GPS Datalogger
Location	Japan	Model	VB3i
Customer ID #		Serial Number	013251
In tolerance as received (Y/N)	N/A (New Unit)	Calibration date	31-03-10
Certificate No.	006613	Calibration due	30-03-11
Temperature	22.3°C	Engineer	Kate Foskett
Humidity	43%		

## Calibration Procedure

The unit under test was subjected to the standard production test procedure. This procedure covers measured velocity by the VBOX over a simulated test course. Simulation data is provided via a calibrated GPS simulator. Analogue output voltage and digital output frequency are checked for calibration against simulated speed. Voltage output range is configured to 5 volts at 100Km/h. Frequency output is configured to 25Hz per Km/h. VBOX indicated values are taken from compact flash data.

## Equipment Used

	Equipment	Serial Number	CAL Cert No.	CAL Due
Simulation of GPS	C001-Spirent	1234	HC43203001	20-01-11
Analogue Voltage measurement	TTI-1906	286689	2278	22-11-10
Frequency Measurement	TTI-1604	286684	2279	22-11-10

## Results

### Accuracy of analogue and digital output signals

Applied Speed	Analogue Output 1			Analogue Output 2		
	Expected	As received	As returned	Expected	As received	As returned
30 Km/h	1.500 V ± 5.0mV	-	1.503 V	1.500 V ± 5.0mV	-	1.503 V
60 Km/h	3.000 V ± 5.0mV	-	3.000 V	3.000 V ± 5.0mV	-	3.000 V
100 Km/h	5.000 V ± 5.0mV	-	4.996 V	5.000 V ± 5.0mV	-	4.998 V

Applied Speed	Frequency Output		
	Expected	As received	As returned
30 Km/h	750 Hz ± 2.5Hz	-	750 Hz
60 Km/h	1,500 Hz ± 2.5Hz	-	1,500 Hz
100 Km/h	2,500 Hz ± 2.5Hz	-	2,500 Hz

### Simulation of constant speed by GPS simulator

Applied simulated value	VBOX indicated speed		
	Criteria	As received	As returned
30 Km/h	±0.1 Km/h	-	30.00 Km/h
60 Km/h	±0.1 Km/h	-	60.00 Km/h
100 Km/h	±0.1 Km/h	-	100.00 Km/h
400 Km/h	±0.1 Km/h	-	399.99 Km/h

### Simulation of constant heading by GPS simulator

Applied simulated value	VBOX indicated heading		
	Criteria	As received	As returned
0°	±0.1°	-	0.03°
90°	±0.1°	-	89.99°
180°	±0.1°	-	180.00°
270°	±0.1°	-	270.00°

## Summary

The unit (VB3i Serial Number 013251) passed all standard production tests and was found to be fully compliant with the product specification.

Racelogic certifies the above instrument meets or exceeds published specifications, and has been calibrated using instruments and standards of known accuracies, which are traceable to "UKAS" United Kingdom Accreditation Service.

Calibration Engineer

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