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# Safran Colibrys VS1000 Series

*Single-axis high performance accelerometer with new ASIC design*



Safran Colibrys is the leading European supplier of high-performance silicon-based MEMS providing long-term bias stability under harsh environments. In a global market worth around \$100M in 2016, high-performance silicon-based MEMS accelerometers address a wide range of applications, from commercial aerospace applications to the defense market. Amongst these, the

industrial market remains attractive and the most dynamic. Thanks to performance improvements and reduced size and cost, more opportunities are appearing.

The VS1000 series consists of vibration sensors based on Colibrys' MEMS accelerometer. They offer the best match for low- to medium-frequency sensing, as well as the best performance stability, with shock resistance and the lowest non-linearity and noise available on the market. The VS1000 is available in various acceleration ranges, from  $\pm 2g$  to  $\pm 200g$ .

The VS1000 features an innovative low-noise application specific integrated circuit (ASIC) developed by HMT microelectronic AG and manufactured in a European foundry with a bipolar CMOS-DMOS process using Deep Trench Isolation (DTI). The ASIC is highly integrated in order to use only one die compared to four dies in the previous versions.

The MEMS die uses a capacitive detection principle and is manufactured by Colibrys using its mature 3-stack bulk micromachining process, providing a very stable MEMS device. The ASIC and MEMS dies are hermetically sealed in a ceramic package to ensure robustness and durability.

Typical applications for the VS1000 accelerometer include railway technology, testing and process control. Key features offered by the components are: large and flat frequency response, exceptional bias and scale factor temperature stabilities, repetitive high-shock resistance enhanced by a smart overload system and lowest noise of  $7 \mu g/\sqrt{Hz}$  in band for the  $\pm 2g$  range.

The VS1002 ( $\pm 2g$ ) and the VS1200 ( $\pm 200g$ ) are analyzed and compared in the report in order to highlight the differences at the process level. Also, a comparison with the Colibrys MS9000 accelerometer is provided.

**Title:** Colibrys VS1000 Accelerometer

**Pages:** 110

**Date:** January 2017

**Format:** PDF & Excel file

**Price:** Full report: EUR 3,490

## COMPLETE TEARDOWN

### WITH:

- Detailed photos
- Precise measurements
- Materials analysis
- Manufacturing process flow
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### AUTHORS:



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Romain is in charge of costing analyses for Advanced

Packaging, MEMS and Integrated Circuits. He has published more than 50 Reverse Costing reports on various MEMS devices including inertial, pressure, microphones or RF sensors.



#### Yvon Le Goff (Lab)

Yvon has joined System Plus

Consulting in 2011 in order to setup the laboratory. He previously worked during 25 years in Atmel Nantes Technological Analysis Laboratory as fab support in physical analysis, and 3 years at Hirex Engineering in Toulouse, in a DPA lab.

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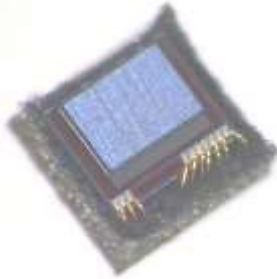
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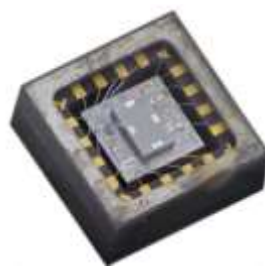
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Pages: 114  
Date: April 2016  
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### Analog Devices ADIS16136 Precision Angular Rate Sensor

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2.2 Some weeks prior to the release date the Seller can propose a pre-release discount to the Buyer

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