



MEMS & Sensors for Mass Market

June, 2013

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INTRODUCTION

This information letter lists the latest news related to MEMS & Sensors. This include **Motion MEMS** (**Accelerometer, Gyroscope, Magnetometer & E-compass**, (combining Accelerometer and Magnetometer), **IMU-iNEMO** (combining Accelerometer, Gyroscope and Magnetometer) and **Environmental Sensors** (**Pressure sensor**); **Humidity sensor** will be available during 13Q4;



INFORMATION on PRODUCTS



LIS3MDL the new high performance 3-axis standalone magnetometer in a 2x2x1 package is now in Mass Production and will be available for Mass market in 13Q4; **in case of interesting business, we can deliver now** (samples and eval board (STEVAL-MKI137V1) available).



H3LIS331DL, the medium-g 3-axis accelerometer is now in mass production and will be available for Mass market in 13Q3; **in case of interesting business, we can deliver now** (samples available).



LIS2DH the 3-axis accelerometer 12bit resolution in 2x2 package introduced in the latest RTM is now available for Mass Market. Samples and eval board (STEVAL-MKI135V1) are available. LIS2DM is not recommended;



INEMO-M1, the smallest 9-axis system-on-board (SoB) of the iNEMO module family, integrates **9-axis sensors** with a powerful computational core, ARM® Cortex™ **M3 32-bit MCU**. A complete set of communication interfaces in a very small size form factor (**13x13x2 mm**). **INEMO-M1** will be available for Mass Market begin of 13Q3. An evaluation board Discovery-M1 (STEVAL-MKI121) is also forecasted begin of Q3 to facilitate utilization of iNEMO-M1. **Sensor fusion SW library** (with source codes) will be proposed for iNEMO-M1 (akaiNEMOEngine_M1LI3);

LSM9DSO the SIP featuring a 3D digital linear **acceleration** sensor, a 3D digital **angular rate** sensor, a 3D digital **magnetic** sensor is now in Mass Production; **LSM9DSO** will be available for Mass Market in 14Q1.

iNEMO sensor fusion is an advanced filtering and predictive software that uses sophisticated **algorithms** to integrate outputs from multiple MEMS sensors. 2 libraries called LITE and PRO are available for 9-axis (3A+3M+3G):

LITE library usable as example and for demonstration. To get the library, provide project details and **contact SILICA FAE**.

iNEMOEngine_LI3 the LITE version for [STEVAL_MKI062V2](#)

iNEMOEngine_M1LI3, the LITE version for [INEMO-M1](#)

PRO library (**recommended**) version is available for several embedded OS and HW platforms; For INEMO PRO Fusion SW ([iNEMOEngine_PI3P](#)), signature of an **End User Certificate (EUC)** and **Evaluation Agreement (EA)** signature is needed; PI3P engine PRO, platform independent is available for **STM32** HW platform; To get the library, provide project details, **EUC** and **EA** signed ;

Versions for Windows 8 ([iNEMOEngine_PW8](#)) and Android ([iNEMOEngine_PAAP](#)) are also available.



An **iNEMO** Sensor fusion video is detailing the added value of Fusion software: [VIDEO](#)

PRODUCTS FOCUS for New Designs in Q2 2013



Products Focusto be preferred for Mass Market:

- **LIS3DH,LIS2DHand LIS3DSH:(3A) - 3-axis Digital Accelerometer**
- **AIS328DQ: (3A) - 3-axis Digital Accelerometer for Industrial & Automotive applications**
- **L3GD20:(3G) - 3-axis Digital Gyroscope**
- **A3G4250D: (3G) - 3-axis Digital Gyroscope for Industrial & Automotive applications**
- **LSM303D:(3A+3M) - E-compass combining 3-axis Accelerometer + 3-axis Magnetometer**
- **LSM330DLCandLSM330D:(3A+3G) – iNEMO Module combining 3-axis Accelerometer + 3-axis Gyroscope**
- **LPS331AP: Absolute Atmospheric Pressure Sensor**

This is the list of products recommended for new designs. Complete datasheet MEMS & SENSORS is available on ST web site:<http://www.st.com/mems>

DOCUMENTATIONS AND SOFTWARE – USEFUL LINKS

<http://www.emcu.it/MEMS/MEMS.html>

ST MEMS general products information: [MEMS](#)

Application Notes on **MEMS**: [Applications Notes for MEMS](#)

Application Note providing information on the use of and application hints on the [LIS3DSH](#) explaining state machine is available: [AN3393 - LIS3DSH: 3-axis digital output accelerometer](#)

Technical Notes on **package** surface mounting: [Technical Notes for MEMS](#)

List of **evaluation boards** is available on ST web site:
[HW Evaluation boards](#), [SW for Evaluation Boards](#), [Applicative SW](#).
Note than **Schematics**, **Gerber** files are also available

List of low level **drivers** (generic or Linux) are also available: [Drivers MEMS](#)

NEW Document / Software updates published:

- [Datasheet](#) for [LIS3MDL](#), Rev2, April 2013
- [Datasheet](#) for [LSM330](#), Rev2, April 2013
- [Databrief](#) for [AHRS for Discovery-M1](#), Rev1, May 2013 (ST internal)
- [UM1601- STEVAL-MKI121V1](#): Discovery kit for INEMO-M1, Rev1, May 2013 (ST internal)
- [Databrief STEVAL-MKI125V1](#) - A3G4250D adapter board for DIL 24 socket, Rev1, May 2013

LATEST ST PRESS RELEASES on MEMS & SENSORS (Q2 2013)

[STMicroelectronics Increases Accessibility of MEMS Motion Portfolio by Simplifying Connection to Linux Systems](#)

[Sleek and Stylish Netatmo Weather Station Forecasts Clear Skies Using STMicroelectronics Components](#)

[STMicroelectronics and University of Amsterdam Faculty of Science Cooperate to Soar with Birds](#)

[STMicroelectronics Leads European Research to Secure Lead in Advanced MEMS Devices](#)



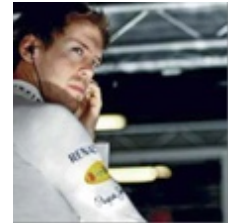
EXTERNAL NEWS on MEMS & SENSORS (Q2 2013)

[Spurred by Google Glass, IHS Forecasts Nearly 10 Million Smart Glasses to Ship from 2012 to 2016](#)



[How ancient Japanese pagoda inspired the smartphone in your pocket](#)

[MEMS for Cell Phones and Tablets 2013, From a \\$2.2B Business in 2012 to \\$6.4B by 2018](#)



[Mems chips bring revolution to STMicro](#)

Bosch and ST top MEMS supplier ranking

[H3LIS331DL, AUTO - International Journal of THE FIA, March 2013: Size matters. ST's high-g accelerometer revolutionizes crash safety in Formula one racing](#)



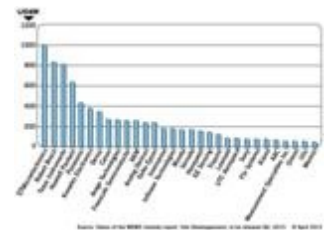
[STMicroelectronics récompense des start-up et des PME pour leur coopération](#)

[MEMS Pressure Sensor 2013](#)

[An overview of emerging trends in MEMS packaging](#)

[Combo MEMS sensor use in cars growing rapidly](#)

[Apple suppliers top MEMS microphone rankings](#)



[Top MEMS Foundries: TSMC passes specialty MEMS players in Yole's annual ranking](#)

[Top 30 MEMS companies of 2012](#)

[Health Awareness Spurs Quadrupling in MEMS Sensor Market for Wearable Electronics and Fitness Monitoring](#)

[Chinese cellphone and tablet makers gain share in MEMS sensor purchasing in 2012](#)