



# STEVAL-MKI062V2

## iNEMO: iNertial Module V2 demonstration board based on MEMS sensors and the STM32F103RE

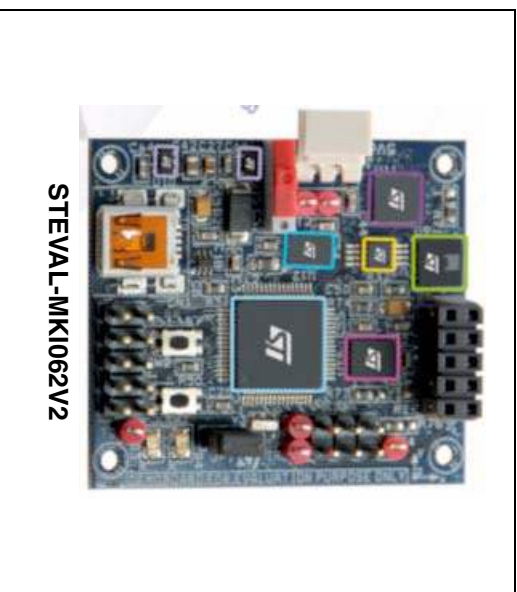
Data brief

### Features

- Two power supply options: power connector, USB connector
- STM32F103RE: high-density performance line ARM-based 32-bit MCU with 256 to 512 kB Flash, USB, CAN, 11 timers, 3 ADCs and 13 communication interfaces
- LPR430AL: 2-axis gyro (roll, pitch) 300°/s full scale with analog output and optional additional filters
- LY330ALH: yaw-axis gyro 300°/s full scale with analog output and optional additional filters
- LSM303DLH: 6-axis geomagnetic module:  $\pm 2 g / \pm 4 g / \pm 8 g$  linear acceleration full scale, magnetic field configurable full scale  $\pm 1.3$  to  $\pm 8.1$  Gauss (max),  $I^2C$  digital output
- LPS001DL: pressure sensor 300-1100 mbar absolute full scale with  $I^2C$  digital output and barometer
- STLM75: temperature sensor with  $-55$  to  $+125^{\circ}C$  range and  $I^2C$  digital interface
- Extended connector for wireless connectivity
- microSD™ card slot
- COM connector with RTS and CTS signals
- USB 2.0 full speed connection
- Reset button
- User LED and button
- RoHS Compliant

### Description

The STEVAL-MKI062V2 is the second generation of the iNEMO™ module family. It combines accelerometers, gyroscopes and magnetometers with pressure and temperature sensors to provide 3-axis sensing of linear, angular and magnetic motion, complemented with temperature and barometer/altitude readings.



representing the new ST 10-DOF (degrees of freedom) platform.

Based on the previous version, the STEVAL-MKI062V2 represents another step forward in miniaturization, integrating five ST sensors: a 2-axis roll-and-pitch gyroscope, a 1-axis yaw gyroscope, a 6-axis geomagnetic module, a pressure sensor and a temperature sensor.

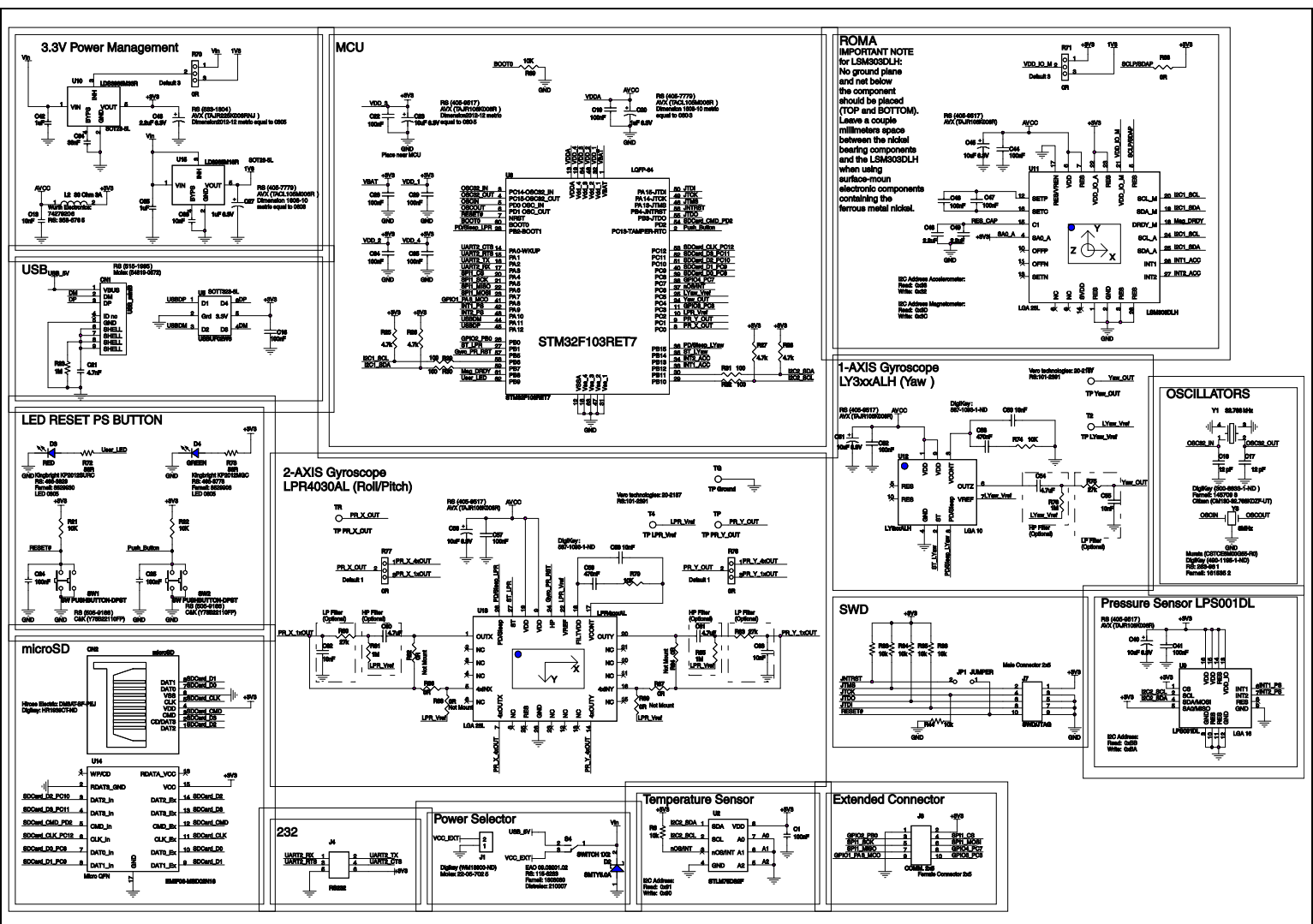
This 10-DOF inertial system represents a complete hardware platform which can be used in numerous applications such as virtual reality, augmented reality, image stabilization, human machine interfaces and robotics.

A complete set of communication interfaces with various power supply options in a small-size form factor (4 x 4 cm) make iNEMO V2 a flexible and open demonstration platform.

To aid in user development and analysis, the STEVAL-MKI062V2 demonstration kit includes a PC GUI for sensor output display and a firmware library to facilitate the use of the demonstration board features.

# 1 Schematic diagrams

Figure 1. STEVAL-MK1062V2 circuit schematics



## 2 Revision history

Table 1. Document revision history

| Date        | Revision | Changes                         |
|-------------|----------|---------------------------------|
| 09-Feb-2010 | 1        | Initial release.                |
| 15-Feb-2010 | 2        | Updated features on cover page. |

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