STEVAL-MKI029V1

Inclination analysis demonstration board based on the STM8S207R6 MCU and LIS331DLH MEMS

Data brief

Features

- Detects and provides visual/audio representation of:
  - tilt on X axis
  - tilt on Y axis
  - circular motion of the board
  - free-fall of the board
- Displays motion information using multi-colored LEDs or music/rhythm patterns
- Provides six different operating modes
- Offers a standby function for low power consumption
- Monitors the 3 AAA batteries and displays their status on the LEDs
- Provides additional MCU I/Os for future extensions
- Equipped with a SWIM connector for debugging capability
- Compliant with RoHS directives

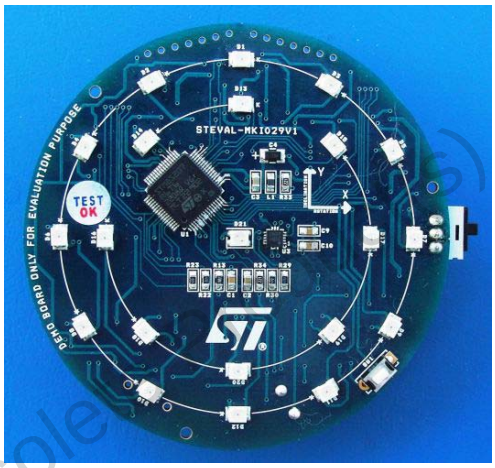
Description

The STEVAL-MKI029V1 inclination analysis board is a handheld demonstration board which detects the tilt on X-axis and tilt on Y-axis. The visual representation of this information is done using colored LEDs placed in two circles.

The system can detect the free-fall of the board and display the information for this event on the bi-color LED at the center of the board.

The system can also be configured to detect the circular motion of the board, in which LED patterns are generated depending on board movement.

The STEVAL-MKI029V1 also features a demonstration mode. In this mode, different LED patterns are displayed irrespective of the position/motion of the board, making the system suitable for exhibitions and seminars.



STEVAL-MKI029V1

There are three musical modes in which music/rhythm is played based on the mode/motion of the board. There are also three silent modes, for a total of six different modes of operation.

The STEVAL-MKI029V1 can be switched from one mode to another by pressing the on-board MODE button. To reduce power consumption, the system automatically enters standby mode when there is no motion for more than 10 seconds. The system “wakes up” from standby when a vibration/motion is detected. The STEVAL-MKI029V1 also monitors the batteries, and allows the user to check their status at any time. When low battery is detected, the system alerts the user and enters into no operation to avoid the system malfunction.

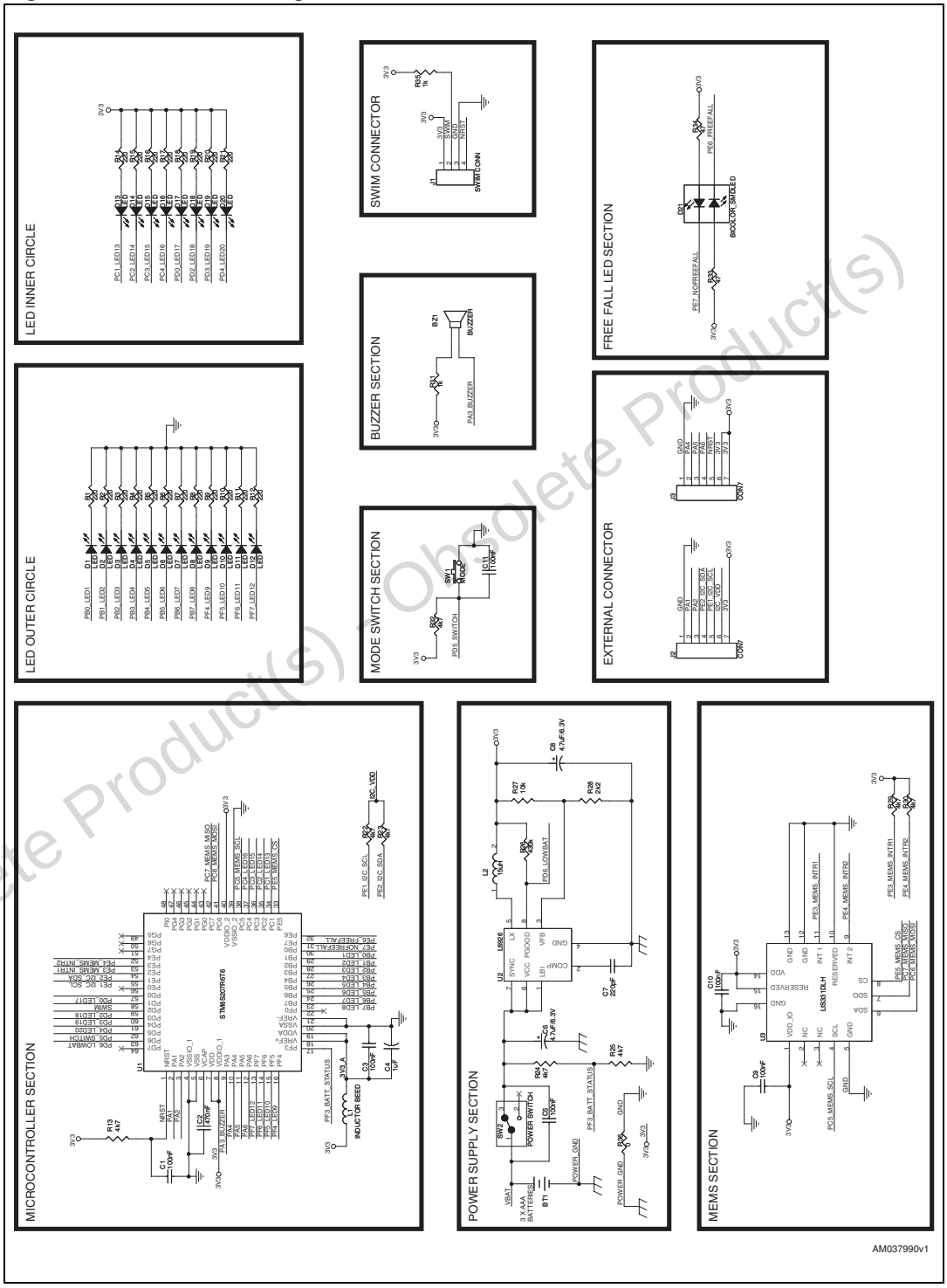
The board is equipped with free MCU I/Os for the external interface, and a SWIM connector is included to provide in-circuit debugging capability.

The system can be powered using 3 AAA batteries of 1.5 V each. The board is of circular shape, with a diameter of 84 mm and a height of 26 mm.

The board is RoHS compliant.

1 Circuit schematics

Figure 1. Schematic diagrams



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
24-Apr-2009	1	Initial release.
15-Jun-2009	2	Content reworked to improve readability Updated *Figure 1: Schematic diagrams*

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST’s terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST’S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY AN AUTHORIZED ST REPRESENTATIVE, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER’S OWN RISK.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Acceleration Sensor Development Tools ***category:***

Click to view products by STMicroelectronics ***manufacturer:***

Other Similar products are found below :

EVAL-ADXL350Z-S ADIS16201/PCBZ ADIS16260/PCBZ BRKOUT-FXLN8372Q BRKTSTBC-A8471 2019 EVAL-ADXL313-Z EVAL-ADXL343Z-M EVAL-ADXL343Z-S EVAL-ADXRS622Z BRKOUT-FXLN8362Q BRKOUT-FXLN8371Q ADISEVALZ EVAL-ADXL346Z EVAL-ADXL346Z-S STEVAL-MKI151V1 EVAL-ADXL350Z FRDM-K64F-AGM04 BRKTSTBC-A8491 FRDMKL25-A8491 FRDMKL25-A8471 FRDM-STBC-AGM04 KX224-I2C-EVK-001 FRDMSTBC-A8471 EVAL-ADXL372-ARDZ 101990281 1018 EVAL-ADXL362-ARDZ EVAL-KXCJ9-1008 1120 1231 1247 1413 DEV-13629 2020 ADXL213EB EVAL-ADXL343Z-DB EVAL-ADXL344Z-M EVAL-ADXL345Z-M EVAL-ADXL363Z EVAL-ADXL375Z-S EVAL-ADXRS623Z EVAL-ADXRS652Z EVAL-CN0274-SDPZ EV-BUNCH-WSN-1Z EV-CLUSTER-WSN-2Z STEVAL-MKI033V1 EVAL-ADXL344Z-DB EVAL-ADXL346Z-DB EVAL-ADXL363Z-MLP