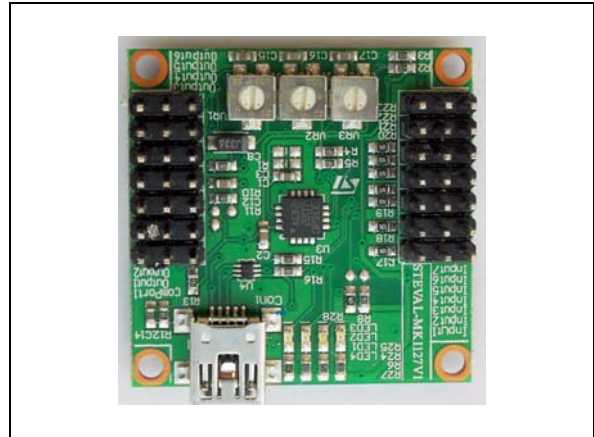


Features

- USB / PC connection for setup and upgrade (USB and/or UART connection)
- Ultra stable over temperature and time
- Operational temperature: -30 °C to +85 °C
- ST L3GD20 MEMS rate sensor
- ARM Cortex-M3 processor for control and I/O
- UART connection for system developers
- Filters:
 - Low pass
 - High pass (programmable)
 - Kalman (programmable)
 - Rolling average (programmable)
- Control algorithm:
 - PID (proportional, integrative, differential)
 - All gain parameters programmable (+3 external pots)
- Input Tx/Rx matching:
 - Matching to any RC transmitter
 - Allows a low cost system with high end features
- Curves (input stick curves):
 - Many standard and also x4 use programmable
 - Good for aircraft control at low cost
- Mixing functions / trim:
 - Pitch into roll for “Wing” aircraft
 - Power in and out (for curve transformation)
 - Trim and range adjustments for fine tuning
- 3 PWM inputs and 6 outputs for control signals:
 - Pitch
 - Roll
 - Yaw
- 1 x UART for 16-bit raw X, Y, Z rate and 8-bit temperature digital data out and PC connection



- Highly programmable for multiple applications
- Variable input voltage (20 V to 5 V, or down to 3.3 V)
- LED displays to show gyro operation
- Factory calibrated
- Size, power and weight
 - 35 x 35 mm PCB
 - 45 mA during normal operation
 - Weight: 8.5 g
- RoHS compliant

Application

- RC (radio controlled) airplane stabilization
- Multi-copter / UAV stabilization
- General robotics

1 Description

The STEVAL-MKI127V1 demonstration board represents an ultra stable 3-axis gyroscope application based on MEMS technology, offering high quality and performance at a low price. Utilizing ST's L3GD20 low-power 3-axis angular rate sensor and ARM Cortex-M3 processor, it offers users an unprecedented level of fine tuning/programming to meet the needs of professionals and hobbyists alike. It is ideal for any number of UAV, conventional aircraft, platform stabilization (such as camera mounts), or general robotics projects, as well as providing optimal performance for competitive RC airplane and recreational flying.

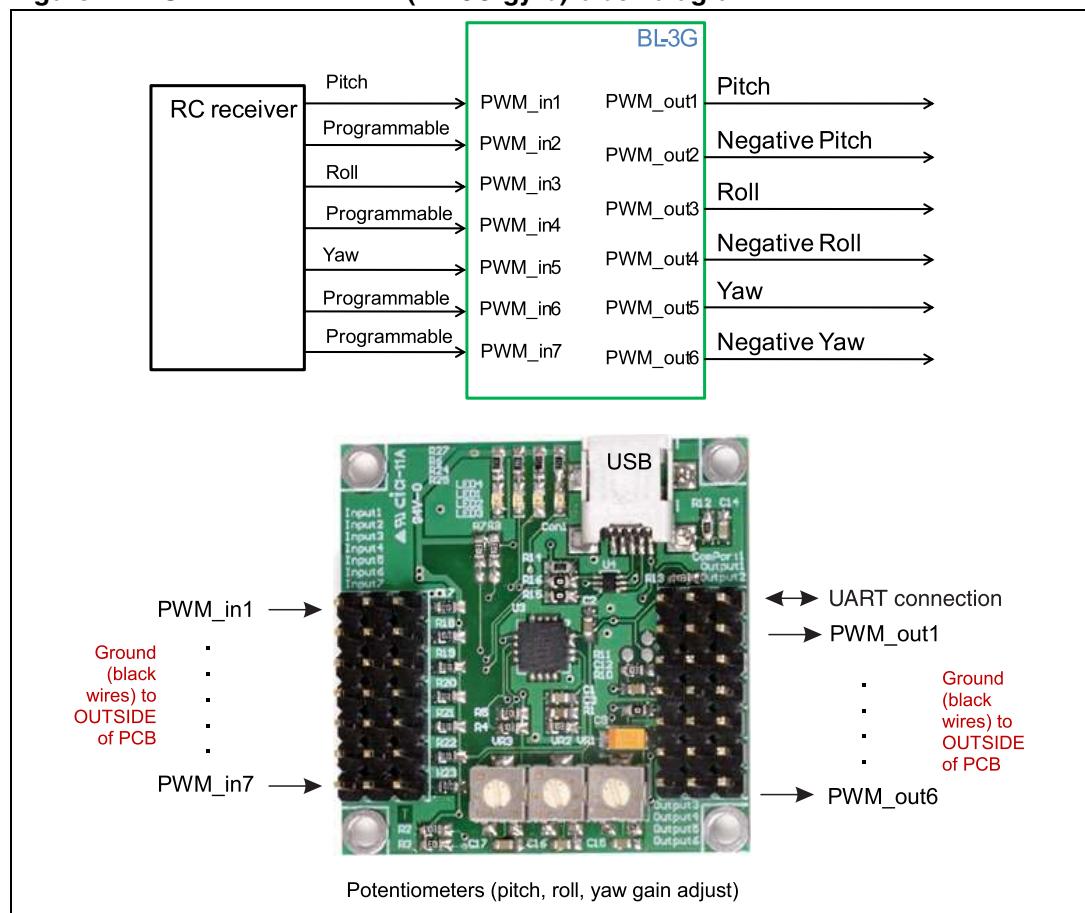
The STEVAL-MKI127V1 was designed by Bluelight Technologies Co. Ltd.

For the complete user manual and PC tools (intuitive, easy-to-use software for detailed user programming and graphical real-time data monitoring), download from:

<http://www.bluelight-tech.com/BL-3GMod.htm>

2 Block diagram

Figure 1. STEVAL-MKI127V1 (BL-3G gyro) block diagram



3 Revision history

Table 1. Document revision history

Date	Revision	Changes
03-Oct-2012	1	Initial release.

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 TWO AUTHORIZED ST REPRESENTATIVES, 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.

© 2012 STMicroelectronics - All rights reserved

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 [Position Sensor Development Tools](#) category:

Click to view products by [STMicroelectronics](#) manufacturer:

Other Similar products are found below :

[EVAL-ADXRS450Z-S](#) [AS5115 PB](#) [AS5215 DB](#) [AS5134 AB](#) [1007214](#) [SCA3100-D04-PCB](#) [STEVAL-MKI043V1](#) [EVAL-ADXRS450Z](#)
[EVAL-ADXRS453Z-S](#) [MIKROE-3661](#) [IPS2200STKIT](#) [HEDS-9820EVB](#) [EVB90340-LDC-200-Rev1.0](#) [MIKROE-4005](#) [MIKROE-4231](#)
[1032](#) [1007214-1](#) [1007214-3](#) [172](#) [178](#) [BOOSTXL-PGA460](#) [ADA4571R-EBZ](#) [EVAL-ADXRS453Z-V](#) [STEVAL-MKI045V1](#) [STEVAL-](#)
[MKI042V1](#) [STEVAL-MKI037V1](#) [ZEPiR000103KITG](#) [ADIS16060/PCBZ](#) [SEN-08503](#) [SEN-13162](#) [IMX-070](#) [SEN-08504](#) [SEN-08502](#)
[BMG250 Shuttle Board](#) [STEVAL-MKI092V2](#) [164](#) [RMH05-DK-XX-1.0](#) [981](#) [OpenIMU300RI EVK](#) [OpenIMU330BI EVK](#) [1783](#) [1786](#) [3595](#)
[981](#) [982](#) [983](#) [985](#) [AS5055A-DK-ST](#) [AS5161-EK-AB](#) [AS5162-EK-AB](#)