



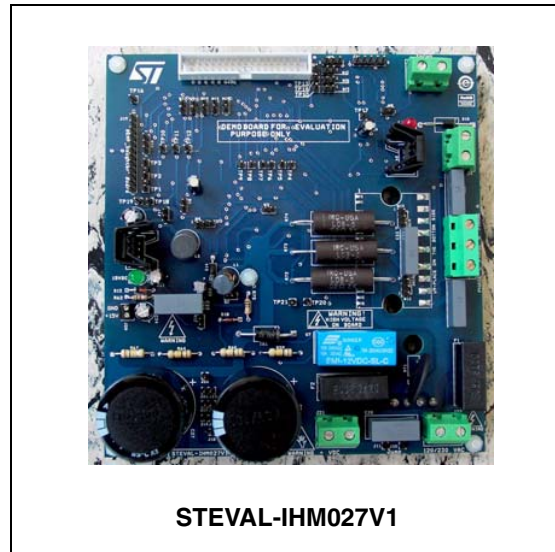
# STEVAL-IHM027V1

Power board with MC connector based on the STGIPS10K60A  
10 A, 600 V intelligent power module

Data brief

## Features

- Minimum input voltage: 125 VDC or 90 VAC
- Maximum input voltage: 350 VDC or 220 VAC
- Capable of using external +15 V supply voltage
- Maximum output power for motor: 1000 W
- Regenerative brake control feature
- Input inrush limitation with bypassing relay
- +15 V auxiliary power supply based on buck converter with VIPer16
- Fully-populated board with test points
- Motor control connector for interfacing with STM3210B-EVAL board and other ST motor control-dedicated kits
- Tachometer and Hall/encoder inputs
- Compatible with BEMF daughterboard for sensor-less six-step control of BLDC motors
- RoHS compliant



## Description

The STEVAL-IHM027V1 is a 1 kW, 3-phase motor control demonstration board featuring the STGIPS10K60A 600 V, 10 A IGBT intelligent power module (IPM) from STMicroelectronics.

The system is an AC/DC 3-phase inverter for driving an induction motor or PMSM motors up to 1000 W. The purpose of the application is to demonstrate the performance of the STGIPS10K60A IPM, housed in a 25-lead, small dual inline package.

The STEVAL-IHM027V1 demonstration board is designed to be compatible with single-phase AC supply from 90 to 220 V, or DC supply from 125 to 350 V.

# 1 Schematic diagrams

Figure 1. STEVAL-IHM027V1 circuit schematics (1 of 5)

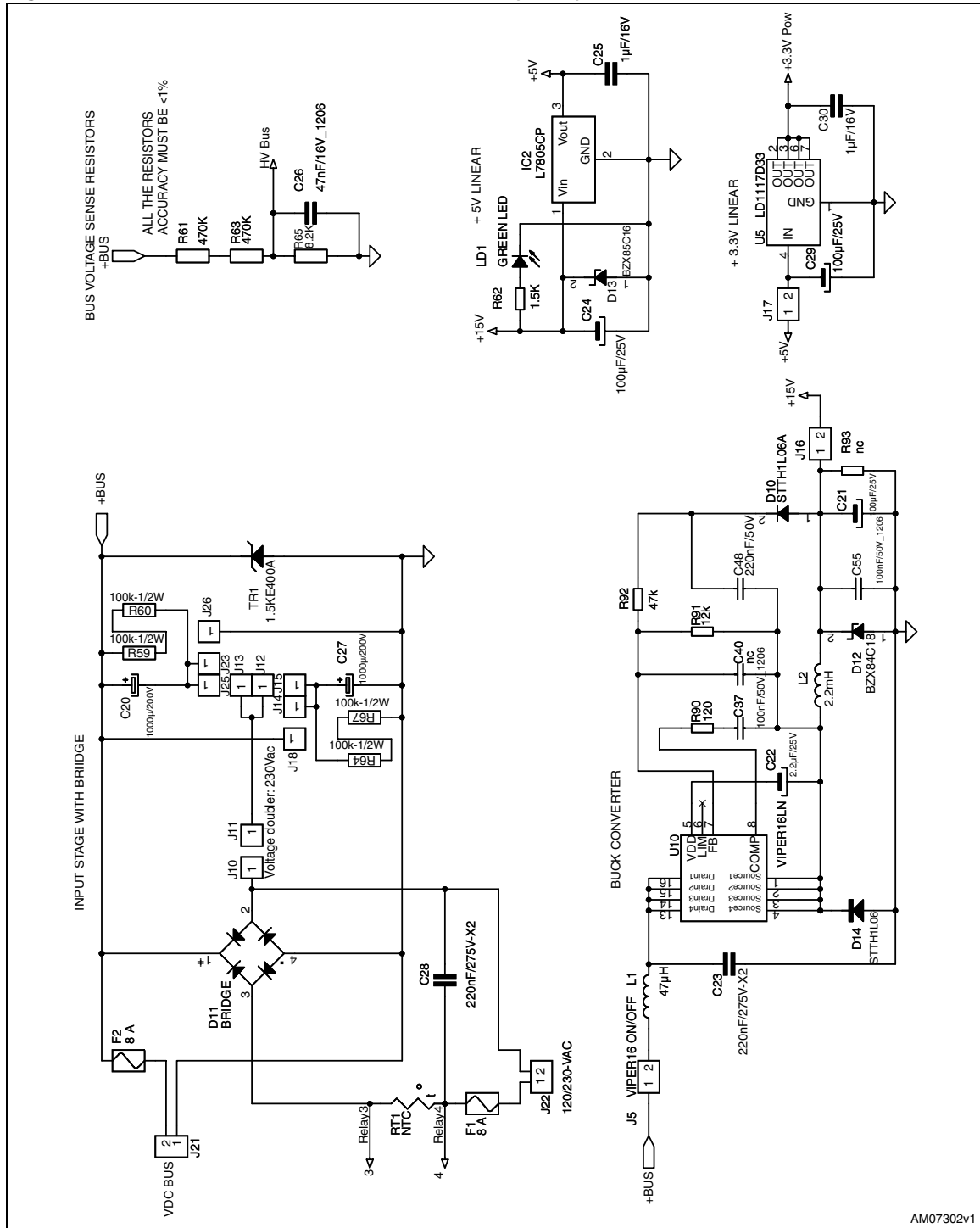


Figure 2. STEVAL-IHM027V1 circuit schematics (2 of 5)

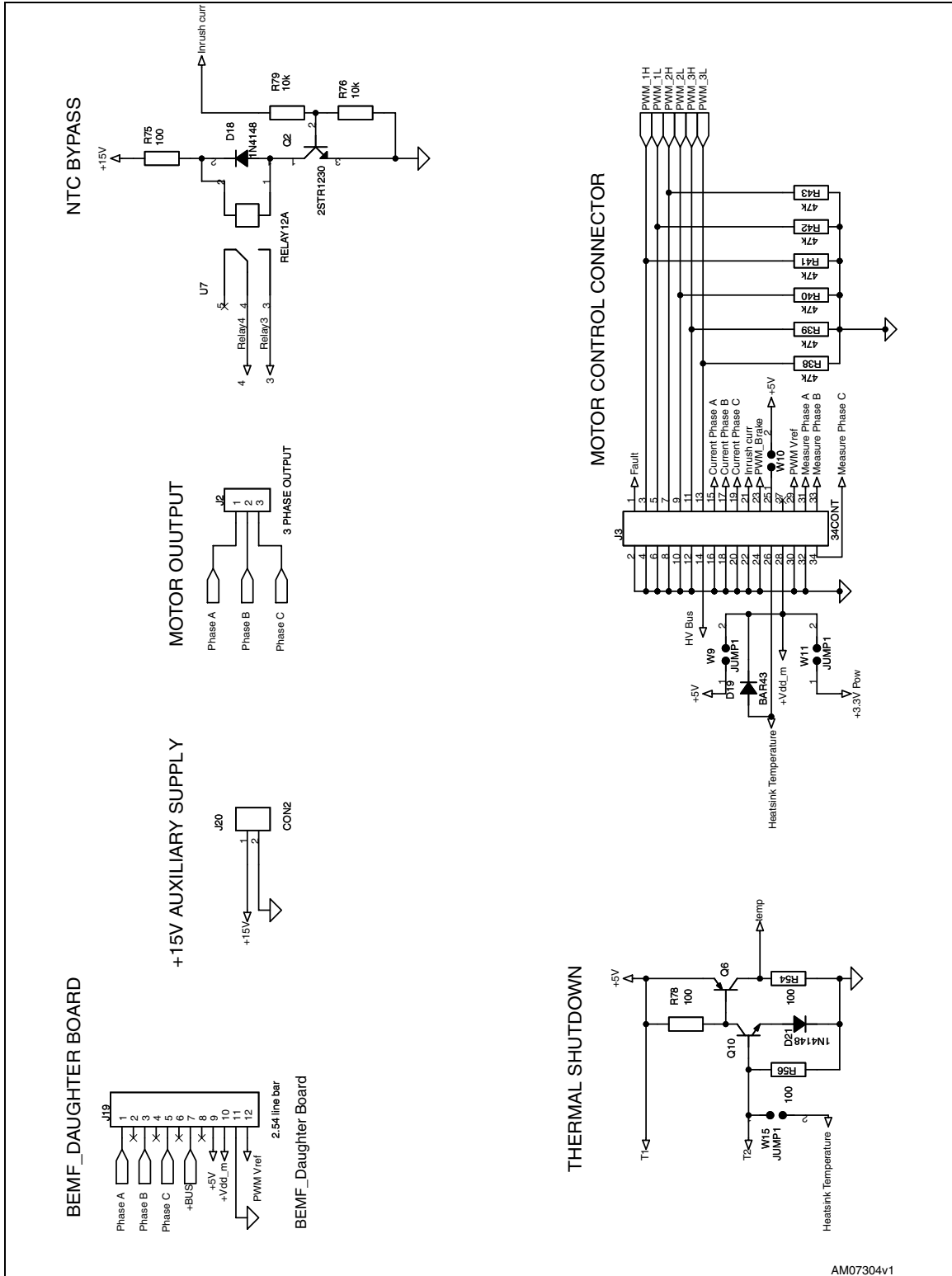




Figure 4. STEVAL-IHM027V1 circuit schematics (4 of 5)

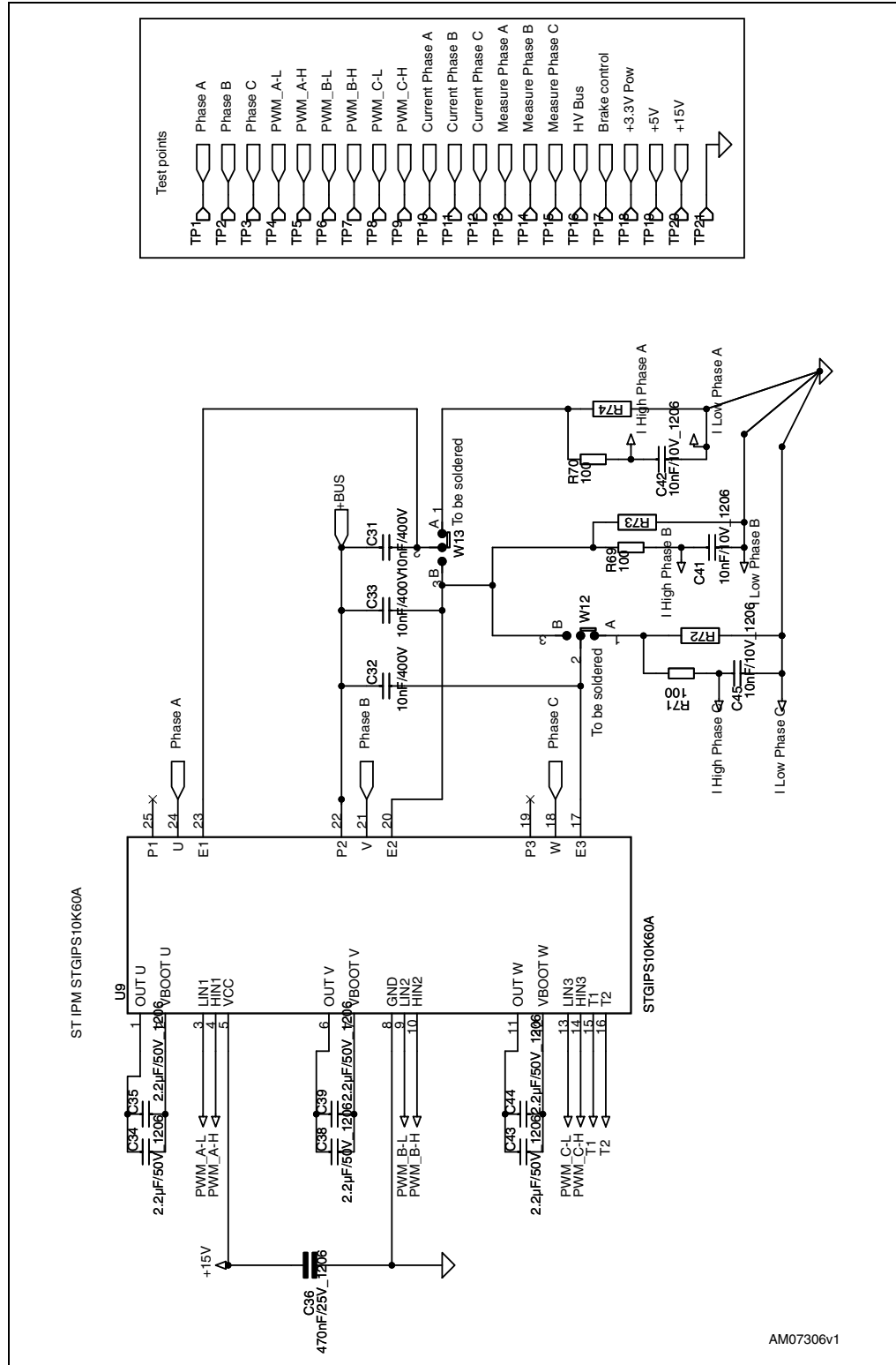
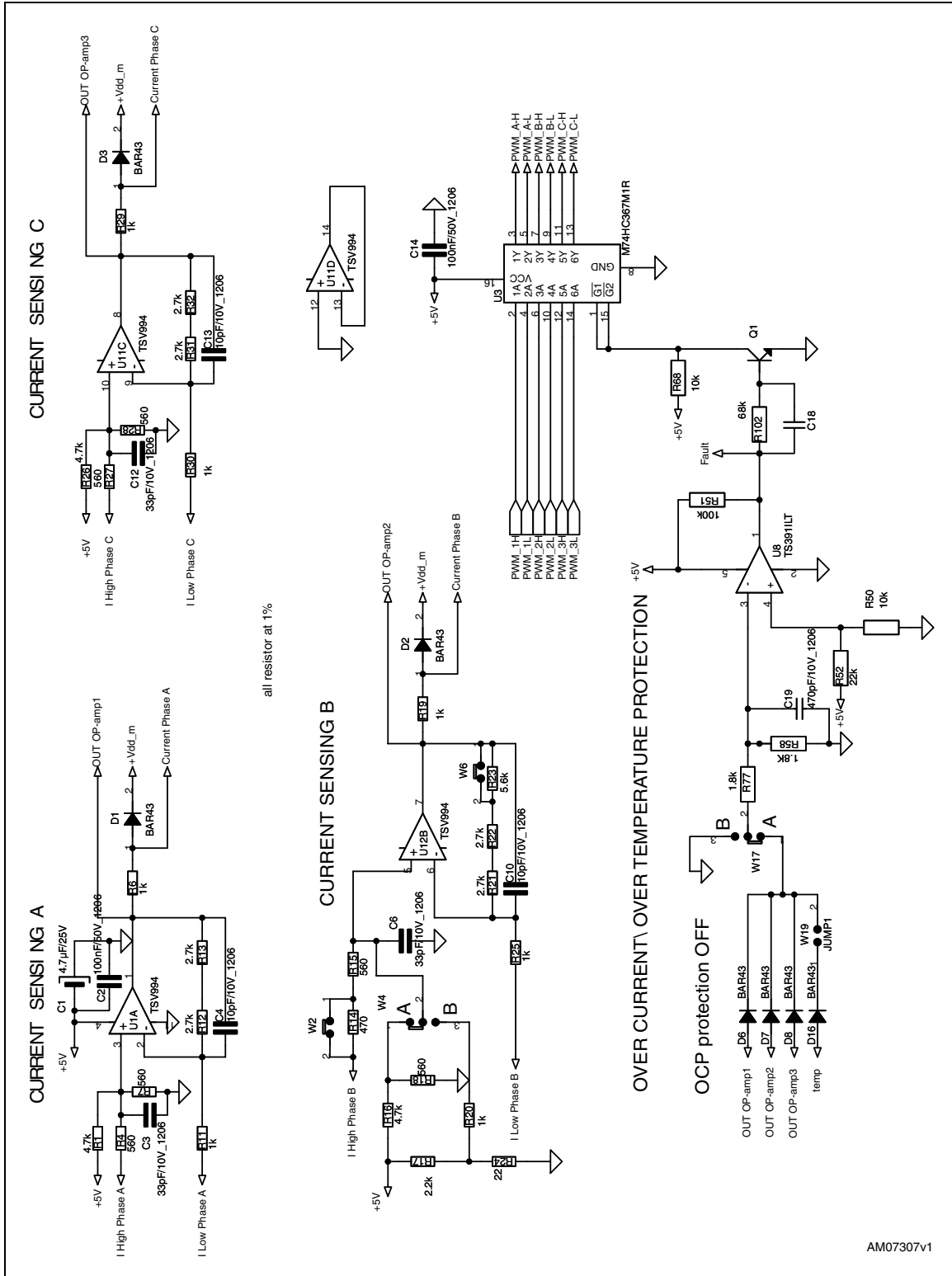


Figure 5. STEVAL-IHM027V1 circuit schematics (5 of 5)



## 2 Revision history

**Table 1. Document revision history**

Date	Revision	Changes
13-Aug-2010	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 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.

© 2010 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](http://www.st.com)