

STEVAL-ISB008V1

Standalone USB Li-Ion battery charger demonstration board based on the STw4102 and STM32F103C6

Data brief

Features

- The STw4102 Li-Ion battery charger IC:
 - supports battery charging by USB or external DC adaptor
 - includes an accurate gas gauge for monitoring battery capacity
- On-board STM32F103C6 microcontroller enumerates and controls the STw4102 for compliance with USB specifications
- Includes dual-color LEDs to indicate charging/discharging status
- Suitable as a standalone Li-lon battery charger in various applications
- RoHS compliant

Description

The STEVAL-ISB008V1 demonstration board is based on the STw4102 battery charger device and the STM32F103C6 microcontroller. The board is designed as a complete standalone battery charger, and includes a gas gauge to monitor battery capacity using five LEDs to represent different capacity levels. Two status LEDs indicate battery charging, discharging and some fault conditions.

By default, the firmware programmed in the demonstration board considers a battery capacity of 1200 mAh. This maximum capacity value is used to identify the percentage of available battery capacity, which is shown using the 5 LEDs.

The demonstration board firmware allows the user to vary the maximum capacity up to 2100 mAh, in steps of 300 mAH.

The STM32F103C6 microcontroller is used to control and monitor the STw4102 battery charger device.

All communication between the STw4102 and the STM32F103C6 is done through an I²C interface.



STEVAL-ISB008V1

The STEVAL- ISB008V1 is equipped with both a USB and a DC adapter connector.

The board can supply a maximum battery charging current of 400 mA for a USB port, extending to 800 mA for a DC adapter.

Schematic diagrams STEVAL-ISB008V1

1 Schematic diagrams

STEVAL-ISB008V1 schematic diagrams Figure 1. MOSFET_STT5PF20V

STEVAL-ISB008V1 Revision history

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
10-Nov-2009	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.

© 2009 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

577