STEVAL-PCN001V1

## USB power switch demonstration board

Features

■ Input parameters:
- Load current: 100 mA, 500 mA, 1 A or 2 A. Larger loads can be applied by properly changing the load resistance (R37)
- Input voltage: 4.4 V, 4.75 V, 5.0 V or 5.25 V
- Under-voltage protection
- Power switch: enable or disable option on the GUI to control the voltage on the enable pin of the power switch

■ Output parameters:
- PC executable software (USBPS_GUI) for use with the demonstration board
- PC executable software (DFUGUI) for upgrading the firmware by USB using the DFU feature
- ST7 firmware (C source code) for the ST72F62 microcontroller

Description

The purpose of this board is to demonstrate the features and capabilities of the ST204x and ST205x USB power switches developed by STMicroelectronics, using a Windows®-based host software application and one of several USB low-speed microcontrollers from ST acting as a peripheral device. The host software and the ST7 source code provides a clear picture of the power switch capabilities. The USB communication between host and the device is done through a HID class based protocol developed specifically for demonstration board applications. The demonstration board incorporates a microcontroller, programmable voltage regulator, MOSFETS, switches and various resistive networks. The on-board regulator can be configured to supply various voltages by selecting appropriate resistance from the resistive network present at the adjust pin of the regulator. Different voltages and loads can be selected from the PC

STEVAL-PCN001V1
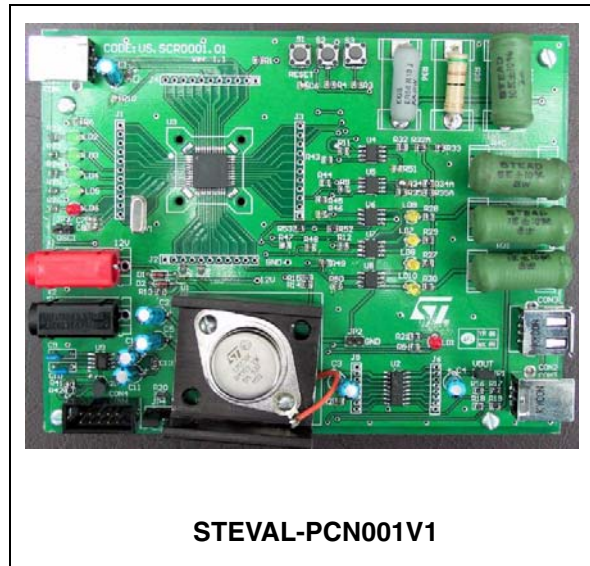
software, as well as through switches present on the board. LEDs are provided on the board to indicate the various combinations of input voltage and load applied to the power switch. The board has an ICC connector to program the microcontroller Flash memory. An external 12 V charge pump is also provided on the board to allow the user to perform in-application programming (IAP) of the microcontroller embedded Flash program memory. Any type of real load (e.g. USB speakers) can be powered from this board by plugging in the connector present on the board

www.BDTIC.com/ST

1 Board schematic

Figure 1. Schematic diagram

www.BDTIC.com/ST
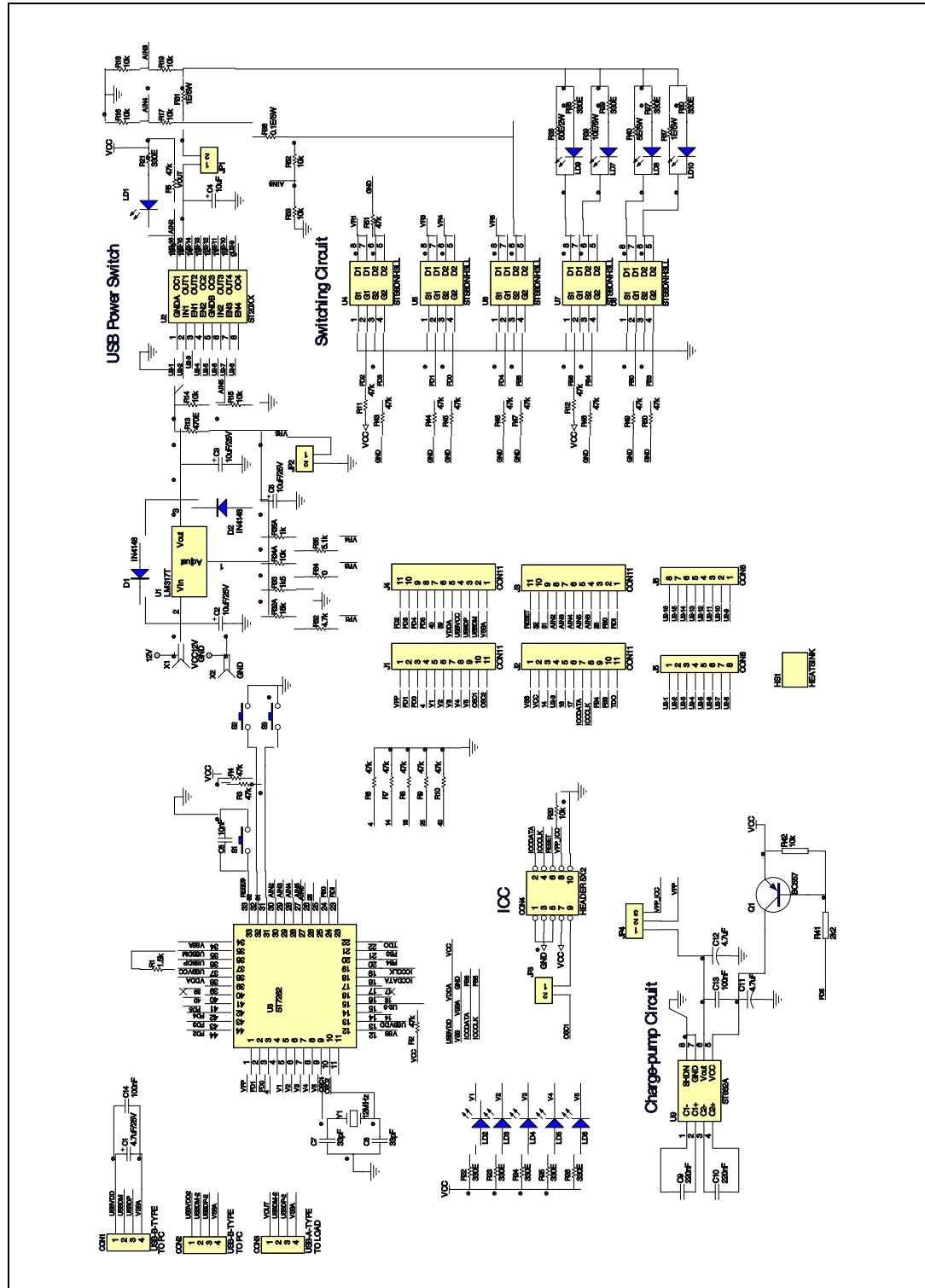
2 Revision history

Table 1. Document revision history

Date	Revision	Changes
01-Sep-2008	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.

STMicroelectronics group of companies

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

www.st.com

www.BDTIC.com/ST