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STEVAL-PCN001V1

USB power switch demonstration board

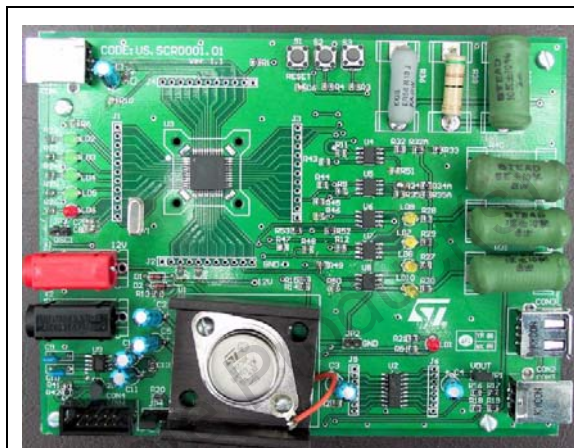
Data Brief

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

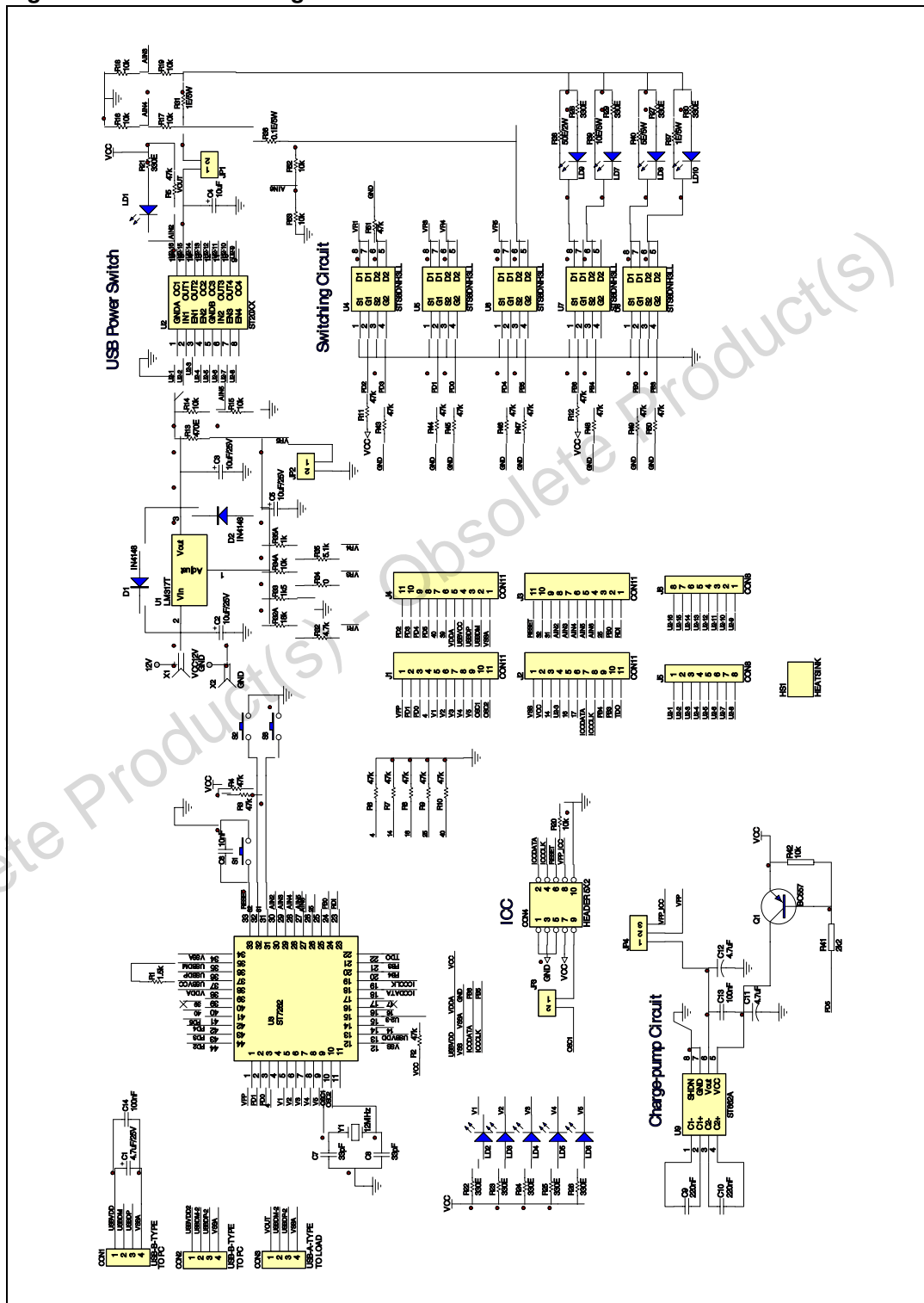
software, as well as through switches present on the board. LEDs are provided on the board to indicate the various combinations of input voltage and load applied to the power switch. The board has an ICC connector to program the microcontroller Flash memory. An external 12 V charge pump is also provided 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

Board schematic

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1 Board schematic

Figure 1. Schematic diagram



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
01-Sep-2008	1	Initial release.

STEVAL-PCN001V1

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