STEVAL-TCS003V1

24-bit port expander demonstration board with LCD, keypad, and PWM interfaces based on the STMPE2403

Data brief

Features

- Provides a user-friendly environment for use in:
  - Standalone mode
  - PC GUI mode
- Board powered through USB Mini-B connector
- PC GUI supports various power saving modes

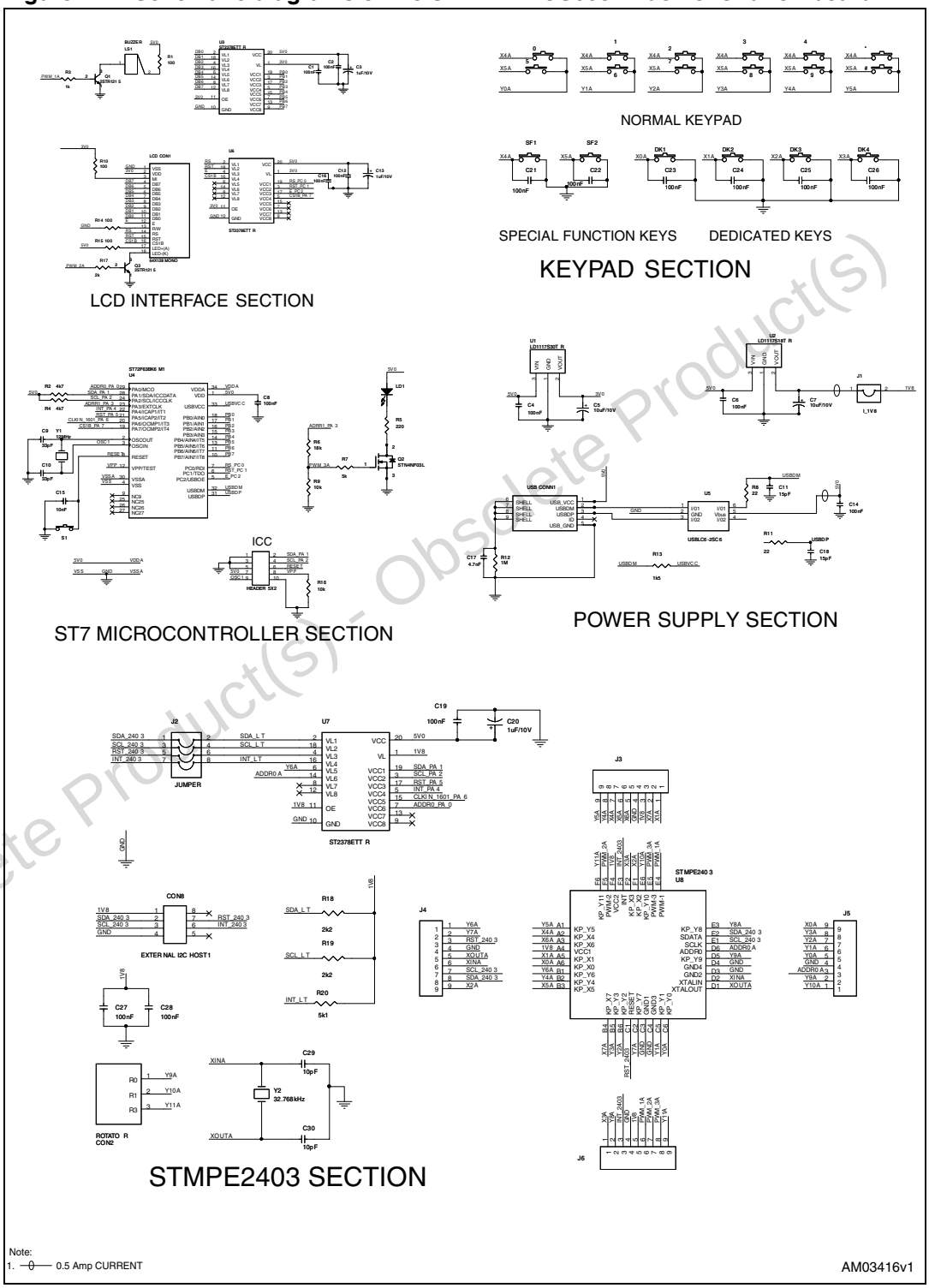
STEVAL-TCS003V1

Description

The STEVAL-TCS003V1 demonstration board is based on the STMPE2403 port expander and the ST7263BK6 microcontroller. It includes a PC GUI (graphical user interface). The objective of the board is to demonstrate the features and capabilities of the STMPE2403 port expander chip using a Windows®-based host software application and one of ST's several USB low-speed microcontrollers (the ST7263BK6 is used in this demonstration board) acting as a control device. In the STEVAL-TCS003V1, the ST7263BK6 microcontroller acts as the I^2C master and controls the STMPE2403 device, which functions as an I^2C slave. The STMPE2403 is used to interface the matrix keypad, dedicated keys, special function keys, rotator controller and PWM controllers. These interfaces are controlled using I^2C communication between the master and slave devices. In run mode, events such as key press (matrix, special function or dedicated keys), rotator controller, power mode, etc. are captured and displayed on the LCD screen and in the scan window of the PC GUI. The capability of the rotator controller is demonstrated using a 3-pin jumper connector. For interfacing with the PC GUI, the application layer is built above the USB core library, making the USB interface hardware control transparent for developers.

1 Circuit schematics

Figure 1. Schematic diagrams of the STEVAL-TCS003V1 demonstration board



Note: 1 ICC interface must be closure to the ST7 device.

2 The lenght of the track of ICCDATA and ICCCLK must be same and should be small.

3 External OSC must be placed closure to ST7 device.

4 All the 100 nF capacitor between any supply pins and GND must be placed near to the regulator outputs.

5 C16 and C18 must be placed closure to STMPE2403 device.

6 32 kHz OSC mustr be placed closure to STMPE2403 device.

7 All the capacitor connected to device supply pins must be placed closure to the device.

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
06-Oct-2009	1	Initial release.

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