



# STEVAL-TCS001V1

24 bit port expander demonstration board with LCD, keypad, and PWM interfaces based on the STMPE2401

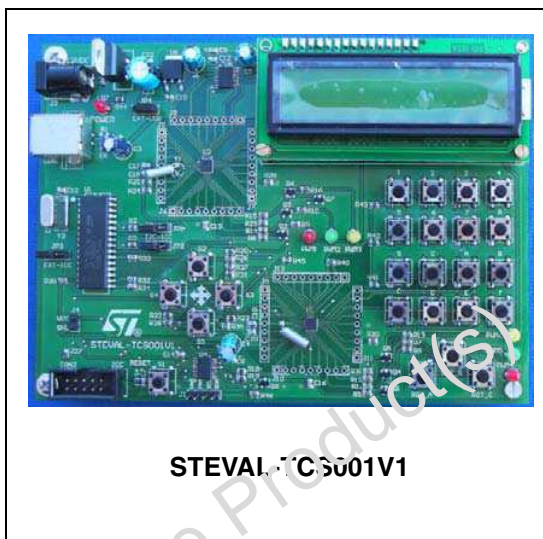
Data Brief

## Features

- User friendly environment
  - Standalone mode
  - PC GUI mode
- Dual power supplies
  - USB
  - External supply
- Full support with various "power saving" modes of port expander

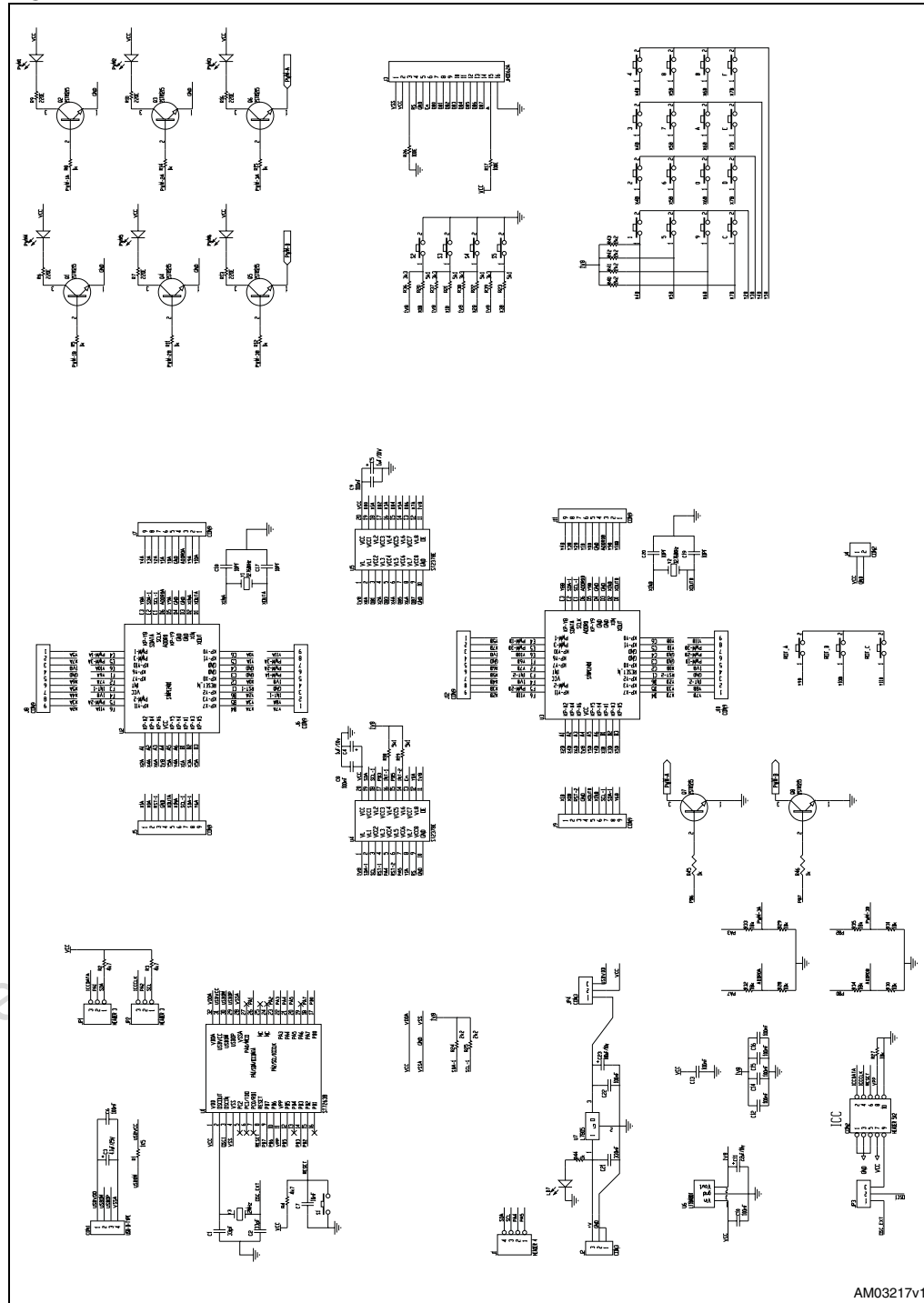
## Description

The objective of this STEVAL-TCS001V1 demonstration board is to display to the user the features and capabilities of the port expander chip STMPE2401 using a windows-based host software application and one of several USB low-speed microcontrollers ST72F63B from ST acting as a control device. In this demonstration board, the ST72F63B microcontroller acts as the I<sup>2</sup>C master and controls two STMPE2401 devices functioning as I<sup>2</sup>C slaves. The two STMPE2401 devices are used to interface LCD, normal keypad, rotator controller, dedicated keys and 6 PWM outputs. All these interfaces are controlled by just using I<sup>2</sup>C communication between master and slave devices. All events like dedicated key press (four direction keys), keypad key press (4 x 4 keypad), rotator direction, power mode etc. are captured and displayed in LCD screen and in the scan window of PC GUI. For interfacing with the PC GUI, the application layer is built above the USB core library that makes all the hardware control of the USB interface transparent for the developers. The PC GUI supports various power saving modes of port expander and wake up feature to get back to default operational mode. In addition the board has the provision for an alternate I<sup>2</sup>C path for external control. The board also has ICC connectors to re-program the ST7 microcontroller Flash memory.



# 1 Circuit schematic

Figure 1. Schematic



## 2 Revision history

Table 1. Document revision history

Date	Revision	Changes
03-Dec-2008	1	Initial release.

Obsolete Product(s) - Obsolete Product(s)

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