

STMT-BOX

Demonstration and development platform for applications based on touch sensing microcontrollers

Data brief

Features

- Display board (STMT-BOX/DISP)
 - Core: STM32F103CBT6 microcontroller
 - Embedded ST-LINK/V2
 - Two 5 V power supply options: ST-LINK/V2 USB connector or user USB connector
 - 240 x 320 TFT color LCD with touch capability
 - Reset pushbutton
 - 2 blue user LEDs and one buzzer
 - Connector for touch/isolation board
 - Connector for extension board
 - USB full speed user connector
 - Voltage translators supporting touch board powered from 1.65 to 3.6 V
- Isolation board (STMT-BOX/ISO1)
 - Connectors for display board and touch board.
 - Galvanic isolation for USART, SPI, I2C, interrupt input, digital output, SWIM and SWD signals
 - Touch application voltage supported from 2.7 to 3.6 V
- Touch keypad board (STM8TL53BOX/P01)
 - Core: STM8TL53C4U6 touch sensing microcontroller
 - Three 5 V power supply options: USB, 5 V supplied by display board or by battery
 - 1.65 to 3.6 V on-board voltage regulator
 - Power consumption measurement capability
 - 19 touchkeys
 - 22 blue LEDs to report touchkeys status
 - SWIM interface for debug support
 - Display/isolation board connector
 - SPI/USART/I2C communication capability



Description STMT-BOX

1 Description

The STMT-BOX[™] platform is designed as a complete demonstration and development platform for STMicroelectronics touch sensing dedicated microcontrollers.

It includes three independent boards: a display board (STMT-BOX/DISP), an isolation board (STMT-BOX/ISO1), and a touch keypad board (STM8TL53BOX/P01).

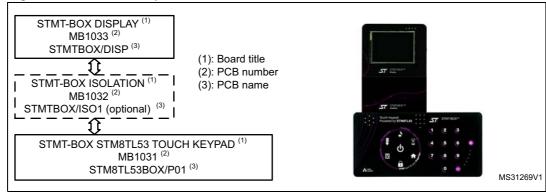
The STMTBOX/DISP display board is designed around an STM32F103x microcontroller. The board features peripherals such as USB full speed, color LCD with resistive touch panel, buzzer and two user LEDs. The interface with touch and isolation board is performed through one 40-pin connector. A second 20-pin connector is available to connect an extension board. The STMTBOX/DISP display board also embeds an ST-LINK/V2 in-circuit debugger and programmer for the display microcontroller or touch microcontroller.

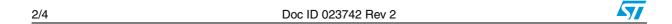
The STMTBOX/ISO1 isolation board is an optional board which can be connected between the display board and the touch keypad board. All the connector signals are galvanic isolated by digital isolator chips. This isolation board can be used during the development cycle to measure and adjust capacitive sensing parameters with a limited influence on the capacitive sensing signals to be measured.

The STM8TL53BOX/P01 touch keypad board is designed as a multi-touchkey board. It features 7 icon touchkeys, 2 touchkeys simulating a linear sensor, and 10 touchkeys organized as a numeric pad. It allows demonstrating the features and performance of the STM8-based touch sensing STM8TL53C4U6 microcontroller for designers willing to implement a similar touch sensing technology in their application.

The three boards can be connected together.

Figure 1. STMT-BOX platform architecture





2 Demonstration firmware

For easy demonstration of the device peripherals in standalone mode, a demonstration firmware is preloaded in the display board STM32F103x Flash memory and in the touch board STM8TL53 Flash memory.

This demonstration firmware allows visualizing touchkey buttons status together with the values of the associated sensing parameters (signals and detection threshold).

In addition the STM8TL53 parameters can be monitored and tuned by using the STM-STUDIO software GUI. The parameter values can be visualized by connecting the touch keypad board to a computer and by using either the display board or an ST-LINK/V2.

For more information and to download the latest version available, please refer to the STMT-BOX demonstration software available on www.st.com.

3 Ordering information

Table 1. Device summary

Part number	Order code
STMT-BOX	STMT-BOX01

4 Revision history

Table 2. Document revision history

Date	Revision	Changes
12-Oct-2012	1	Initial release.
18-Oct-2012	2	Restructured Section 1: Description.

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 TWO AUTHORIZED ST REPRESENTATIVES, 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.

© 2012 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

4/4 Doc ID 023742 Rev 2

