



## 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



# 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).

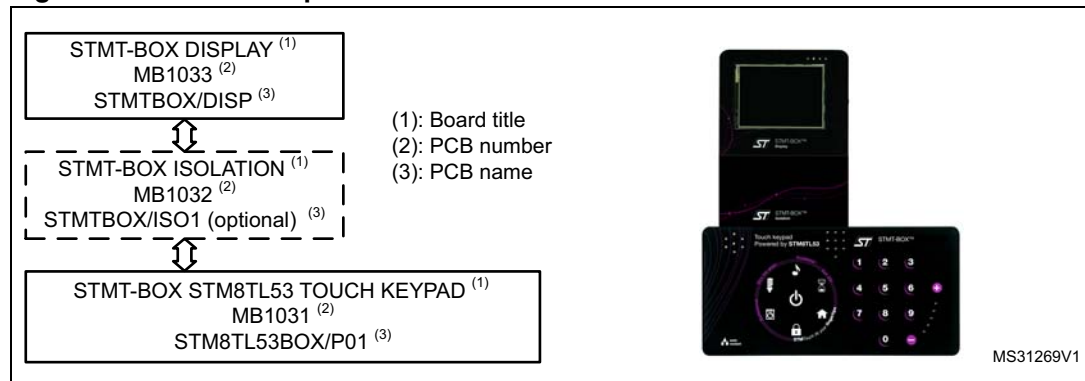
The STMTBOX/DISP display board is designed around an STM32F103x microcontroller. The board features peripherals such as USB full speed, color LCD with resistive touch panel, buzzer and two user LEDs. The interface with touch and isolation board is performed through one 40-pin connector. A second 20-pin 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](http://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 <a href="#">Section 1: Description</a> .

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