



Guide for Touch Sensing Applications

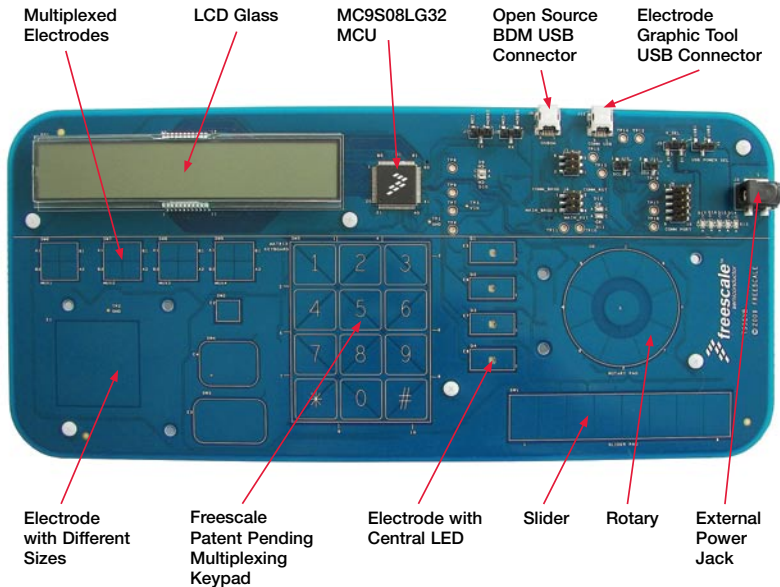
Touch Sensing Software

Evaluation board quick start guide





Get to Know the Touch Sensing Tools





Introduction

The Touch Sensing evaluation board (TSSEVB) contains everything you need to get you started with a touch sensing application. The touch sensing software enables capacitive sensing for the entire Freescale S08 family of microcontrollers (MCUs), providing commonly used touch sense decoding structures such as keypad, rotary and slider.

The TSSEVB has all the decoding structures supported by the touch sensing software along with some multiplexed and different size electrodes.

This quick start guide is designed to get you ready to develop your touch sensing application using the MC9S08LG32 microcontroller within minutes.

The TSSEVB includes two MC9S08JM60 MCUs, one is open source BDM that is used to program and debug, while the other is used to communicate with the electrode graphing tool GUI on a PC.

The TSSEVB also contains an on-board display that allows you to explore software development combining the integrated LCD driver with the touch sensing software.

Step-by-Step Installation Instructions

In this quick start guide, you will learn how to set the TSSEVB and run the default touch sensing demonstration.



Install CodeWarrior™ Development Studio

Special Edition

CodeWarrior is a powerful tool designed to help you maximize your time to market. CodeWarrior installation is a one-time required step before connecting the board to your computer.

1. Insert Getting Started DVD in your computer and a menu will appear.
2. Click on the appropriate link to **Install CodeWarrior**.
3. Follow the on-screen instructions to complete installation.
4. Once installed, the Service Patch for CodeWarrior 6.2.2, and the Service pack for the LG32 should also be installed. These can be found in the DVD or at <http://www.freescale.com>.

After installation is complete, take advantage of several CodeWarrior tutorials that will walk you through various development tool features, such as C Programming, Assembly Programming, Using Processor Expert and more. Simply open CodeWarrior via the **Start > Programs > Freescale CodeWarrior > CW for Microcontroller V6.2 > CodeWarrior IDE.exe** path. Click Run Getting Started Tutorial from the startup dialog, select a tutorial, and follow the on-screen instructions.

STEP
2

Copy TSSEVB Materials

The Getting Started DVD included with the demo board kit contains Touch Sensing Software Suite and TSSEVB demo board materials under the Documentation tab. For your reference, the documentation contains:

- Touch Sensing Software Evaluation Board schematics
- Touch Sensing Software Evaluation Board Users Guide (TSSEVBUG)
- Designing Proximity Sensing Electrodes Application Note (AN3863)
- Touch Sensing Electrode Graphing Tool Users Guide (TSSEGTUG)

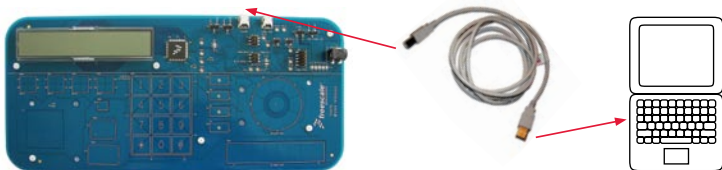
STEP
3

Connecting the TSSEVB

The TSSEVB demo board can be powered either through the integrated USB_BDM interface or through the barrel connector.

In case the board is powered through the USB_BDM, you are asked to install the USB driver. The USB driver installation is a one-time required step that requires CodeWarrior installation first.

1. Remove board from anti-static pouch.
2. Connect provided USB cable from a free USB port on your computer to the USB connector on the board.
3. The operating system will recognize your board as new hardware and will prompt you to install the USB drivers. Select Recommended Option to install



the software automatically. USB drivers for your board were pre-loaded in the CodeWarrior installation.

4. Follow the on-screen instructions to complete USB driver installation.

In case the board is powered through the barrel connector, make sure that the demo application code has been previously loaded to the TSSEVB evaluation board.

1. Remove board from anti-static pouch.
2. Connect the external power supply to the barrel connector.
3. Start testing the TSSEVB.

STEP 4 **Run and Debug Demo Application Code on Board**

The TSSEVB comes with a pre-loaded demo application that allows the user to start testing the board as soon as it is connected. In case the demo application does not start, the user will have to load the program using CodeWarrior for

Microcontrollers Integrated Development Environment (IDE).

1. Start CodeWarrior by selecting it in the Microsoft Windows Start menu.
2. From the CodeWarrior main menu, click **File > Open**, search the TSSEVB.mcp file, and click on the **Open** button. The Project window appears. This is the board example you copied from the Getting Started DVD included with the TSSEVB demo board kit.
3. The user-written C code of this example is contained in the main.c file.
4. From the main menu, click **Project > Debug**. The CodeWarrior compiles the source code, generates an executable file, and downloads it to the demo board.
5. A new debugger environment opens. To execute the program in a real-time environment, click **Run > Start/Continue** from the main menu.
6. To stop the program execution, click **Run > Halt** from the CodeWarrior main menu. The next instruction to be executed is highlighted in the Source window.

7. From the main menu, click **Run > Single Step**. The instruction highlighted in the Source window is then executed, and the program execution is stopped immediately after.
8. From the main menu, click **Run > Start/Continue**. The application restarts from where it was previously stopped.

After completing the software and hardware setup successfully, test your board by running the demo board application pre-loaded in the microcontroller's on-chip flash memory. For information on how to use the demonstration code, refer to the documentation that comes with the demo software files.



Learn more at www.freescale.com/touchsensing.

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