



Tools for Sensor Applications

## Sensor Toolbox

Unified hardware, software and accessories for sensor applications

### Target Applications

- Altimeters
- Barometry (portable and desktop)
- Blood pressure monitors
- Dialysis and drug delivery systems
- Gaming controllers
- GPS navigation devices
- Hard disk drives (HDD)
- Health care devices
- Heating, ventilation and air conditioning
- Home appliances
- Home entertainment
- Hospital beds and air mattresses
- Industrial control
- Liquid-level measurement
- Mobile phones
- Patient monitoring systems
- Personal computer peripherals
- Portable media devices
- Remote monitoring devices
- Robotics
- Sports diagnostic systems
- Toys
- Weather stations

### Overview

Freescale's Sensor Toolbox offers a customizable selection of sensor development tools, accessories and software from Freescale's portfolio of acceleration, pressure and touch sensors. Sensors enrich designs with a broad range of capabilities in detecting real-world conditions, such as motion, touch or pressure.

### Unified Architecture

The Sensor Toolbox contains a distributed array of tools that provide hardware, software and accessories in a common friendly platform. All sensor evaluation kits are USB-enabled plug-and-play devices. The GUI interface uses a single software install that reduces complexity and improves reliability through periodic software updates. Complimentary software algorithms as well as demo, evaluation and tutorial modes through the GUI interface are available at [freescale.com/SensorToolbox](http://freescale.com/SensorToolbox).

### Enablement

The Sensor Toolbox was developed to help customers achieve quick time to market with Freescale's sensor products. It provides

development ease with a unified set of development software, hardware (including interchangeable daughter cards), documentation and accessories for Freescale acceleration, pressure and touch sensors. The Sensor Toolbox also includes complimentary sensor algorithms to help developers get the most from the Freescale sensor functions such as orientation, shake, tap, freefall, motion, tilt, positioning, shock or vibration with inertial sensors, PSI conversion for gauge pressure and altimetry for absolute pressure with pressure sensors, water level monitoring, switch replacement and touch pad implementations with touch sensors.

### Enrichment

Sensors enrich designs with a broad range of capabilities in detecting real-world conditions, such as motion, touch or pressure. The Sensors Toolbox expands the customer's design possibilities with ease of use and full capabilities. With a demo, evaluation and tutorial mode contained in the GUI interface, running the Sensor Toolbox couldn't be easier.

## Key Features

- Multiple toolsets that work on a unified platform
- Complimentary software installer
- Demo, evaluation and tutorial modes included in the GUI demo
- Newer tools will continue to be introduced and added to the Sensor Toolbox

## Benefits

- Demonstrates each sensor type (acceleration, pressure, touch) on a common platform
- Customizable plug-and-play
- Single software install reduces complexity and improves reliability
- Consistent sensor platform
- Demonstrates end application capabilities

Freescale is a leading provider of pressure, inertial and touch sensors and has offered MEMS-based sensors for 30 years. The sensor ICs complement Freescale's broad portfolio of ZigBee® technology, microcontrollers, microprocessors, digital signal processors, analog ICs and development tools to offer system solutions to customers.



| Sensor Family                       | Kit Number       | Board Type   | Description   |
|-------------------------------------|------------------|--|---|
| Accelerometer                       | LFSTBBAT3        | Accelerometer Power Board  | 3V Battery Board  |
|                                     | LFSTBBAT9        | Accelerometer Power Board  | 9V Battery Board  |
|                                     | LFSTBUSB         | Accelerometer Interface Board  | USB Communication   |
|                                     | LFSTBEB845x      | Accelerometer Development Boards                                       | MMA8451Q, MMA8452Q, MMA8453Q Accelerometers   |
|                                     | RDMMA845x        | LFSTBEB845x, LFSTBUSB  | The RDMMA845x bundled kit includes all three MMA845xQ accelerometer development boards as well as the accelerometer USB board |
|                                     | LFSTBEB8450      | Accelerometer Development Board  | MMA8450Q Accelerometer  |
|                                     | RD3924MMA8450Q   | LFSTBEB8450, LFSTBUSB  | Contains the USB communication board and accelerometer development board for evaluating the embedded MMA8450Q functionality   |
|                                     | LFSTBEB7660      | Accelerometer Development Board  | MMA7660FC Accelerometer   |
|                                     | LFSTBEB7455      | Accelerometer Development Board  | MMA7455L Accelerometer  |
|                                     | LFSTBEB7361LC    | Accelerometer Development Board  | MMA7361LC Accelerometer   |
| Pressure                            | KITMPXV5004DPEVB | Pressure Sensor Development Board                                      | MPXV5004DP Pressure Sensor  |
|                                     | KITPRESSURE1EVB  | Pressure Sensor Interface Board  | USB Communication   |
|                                     | KITMPXA6115AEVB  | Pressure Sensor Development Board                                      | MPXA6115AC6U Pressure Sensor  |
|                                     | KITMPL115A1EVB   | Pressure Sensor Development Board                                      | MPL115A1 Pressure Sensor  |
| Touch                               | KITMPR121EVM     | Touch Sensor Kit   | MPR121 Touch Sensor   |
|                                     | KITMPR03xEVM     | Touch Sensor Kit   | MPR03x Touch Sensors  |
| Starter Kit                         | KITSTARTER1EVM   | LFSTBEB7660, LFSTBUSB, KITMPXV5004DPEVB, KITPRESSURE1EVB, KITMPR03XEVM | Subset of the latest acceleration, pressure and touch sensor development tools  |
| Second Edition Starter Kit          | KITSTARTER2EVM   | KITMPR121EVM, LFSTBEB845x, LFSTBUSB, KITMPL115A1EVB, KITPRESSURE1EVB   |   |
| Starter Kit Development Boards Only | KITSTBLITE2EVM   | KITMPR121EVM, LFSTBEB845x, KITMPL115A1EVB                              |   |
| SENSORS_TOOLBOX_INSTALLER           |                  |  | GUI Software  |

**Learn More:** For current information about Freescale products and documentation, please visit [freescale.com/SensorToolbox](http://freescale.com/SensorToolbox).