

Tools for Sensor Applications

Sensor Toolbox

Hardware, software and accessories for sensor applications



Overview

Freescale offers the Sensor Toolbox, a collection of evaluation boards and software that support Xtrinsic sensing solutions. These tools include accelerometers, magnetometers, gyroscopes, touch and pressure sensors that enrich system design with a broad range of capabilities in detecting real-world conditions, such as motion, touch or pressure. The breadth of our sensor and microcontroller portfolio allows software to be leveraged based on the sensing and processing needs of end products. Access this one-stop shop for any of your sensing needs.

Unified Architecture

The Sensor Toolbox contains an array of tools that provide hardware, software and accessories in friendly platforms. All sensor evaluation kits are USB-enabled plug-and-play devices. Complimentary software algorithms as well as demo, evaluation and tutorial modes through the GUI interface are available at 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 software, hardware, documentation and accessories for Freescale accelerometers, magnetometers, gyroscopes, 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, free fall, 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 touchpad implementations with touch sensors. In addition, the gyroscope and magnetic sensors can work in conjunction with Freescale's accelerometers for accurate motion and compass heading information.

Key Features

- Multiple sensor toolsets
- Complimentary software
- Demo, evaluation and tutorial modes included
- 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

Target Applications

- Altimeters
- Barometry (portable and desktop)
- Blood pressure monitors
- Dialysis and drug delivery systems
- Gaming controllers
- GPS navigation devices
- Hard disk drives (HDD)
- Healthcare 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

Kinetis KL25z
Freescale Freedom
development board



FRDM-FXS-MULTI-B
Freescale Freedom
development board
platform featuring
multiple Xtrinsic Sensor
functions

FXLN8361Q
Xtrinsic accelerometer
breakout board with
IND-FXS-PLAT
baseboard



Freescale: A Leader in Sensing Solutions

Expanding on its more than 30-year heritage of sensor innovation, Freescale's Xtrinsic sensing solutions are designed with the right combination of high-performance sensing capability, processing capacity and customizable software to help deliver smart, differentiated sensing solutions. With Xtrinsic sensors, our vision is to offer a diverse and differentiated product portfolio to meet the expanding needs of the automotive, consumer and industrial segments.

Development Tools

Category	Kit Number	Featured Device	Compatible Board(s)
Starter Kits	KITSTARTER2EVM	MMA8451Q MMA8452Q MMA8453Q MPL115A1 MPR121	LFSTBEB845X LFSTBUSB KITMPL115A1EVB KITPRESSURE1EVB KITMPR121EVM
	KITSTBLITE2EVM	MMA8451Q MMA8452Q MMA8453Q MPL115A1 MPR121	LFSTBEB845X KITMPL115A1EVB KITMPR121EVM
Magnetic Sensors	RD4247FXOS8700	FXOS8700 MAG3110	All Magnetic Toolbox Boards
	LFSTBEB3110	MAG3110	All Magnetic Toolbox Boards
	RD4247MAG3110	MAG3110 MMA8451Q	LFSTBEB3110
Acceleration Sensors	LFSTBPROTO	MMA8652FC MMA8653FC	All Magnetic Toolbox Boards
	RDMMA865x	MMA8451Q MMA8452Q MMA8453Q	LFSTBEB865X
	LFSTBEB845X	MMA8451Q MMA8452Q MMA8453Q	LFSTBUSB LFSTBBAT9
	RDMMA845x	MMA7660FC	
	LFSTBBAT9	MMA7455L	LFSTBEB7660 LFSTBEB7455
	LFSTBUSB	MMA955xL	LFSTBEB7660 LFSTBEB7455
	LFSTBEB7660	FXLC95000L	LFSTBBAT9 LFSTBUSB
	LFSTBEB7455	MPL3115A2	LFSTBBAT9 LFSTBUSB
Sensing Platforms	KITMMA9550LEVM	MPXV5004DP	All Fused Sensing Platforms
	KITFXLC95000LEVM	MPL115A	<i>Magnetic daughterboard is coming soon</i>
Pressure Sensors	DEMOSTBMPL3115A2		
	KITMPXV5004DPEVB	MPR03x	KITPRESSURE1EVB
	KITMPL115A1EVB	MPR121	KITPRESSURE1EVB
	KITPRESSURE1EVB		KITMPXV5004DPEVB
Touch Sensors	KITMPR03xEVM		All Touch Sensors
	KITMPR121EVM		All Touch Sensors

For more information, visit freescale.com/sensortoolbox

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