Accelerometer Application and Firmware Development Kit

USB Platform

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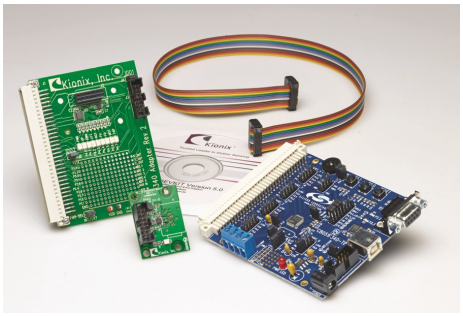
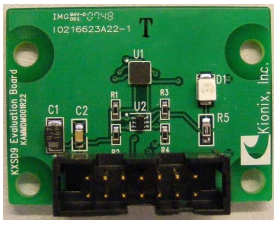
Kionix Evaluation Board
Silicon Laboratories C8051F340DK
Associated cable, software, and documentation needed to operate in a PC and USB environment.



OVERVIEW

The Kionix Accelerometer Application and Firmware Development Kit provides a simple environment to quickly begin the development of applications and firmware that incorporate Kionix accelerometers. The Development Kit provides a common interface to Kionix evaluation boards. The included software provides an easy-to-use interface for displaying and recording acceleration data. Plus, a graphical register map allows the user to see and change the contents of control registers. The Silicon Labs development board allows the use of a standard 8051 microcontroller core and a USB interface for PC development/evaluation environments. Additionally, the F340 Adapter Board provides a visual indication (through an LED array) of interrupts (motion and tap) and screen rotation output states for Kionix products that include those functionalities.

Evaluation Board

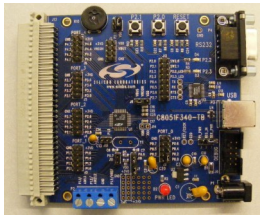


To facilitate prototype work with Kionix accelerometers, Kionix has created evaluation boards for each accelerometer product. The evaluation boards provide access to the pins of the accelerometer, contain all of the appropriate decoupling capacitors and pull-up resistors, and allow for easy connection into a proto-typing system. The Development Kit accommodates the KXTE9 and KXSD9 Evaluation Boards and future devices that will have expanded embedded functionality.

Adapter Board

The Kionix F340 Adapter Board provides the link between the accelerometer Evaluation Board and the Silicon Labs C8051F340-TB. Two connectors are provided for connecting Evaluation Boards to the Adapter Board. Evaluation Boards can be plugged in directly or tethered via a ribbon cable. The tethered connection can be useful when evaluating screen rotation, tap/double-tap, or motion wake-up functionality since the accelerometer can be more easily manipulated.

Silicon Labs C8051F340DK



The Silicon Labs C8051F340-TB provides the microprocessor control and USB interfacing for the Development Kit. As a part of the Kit, no firmware changes are needed.

Software

Kionix recommends the following minimum system requirements:

Windows XP Service Pack 2
.NET Framework 2.0
USB 2.0

An installer application is provided to aid in the setup process.

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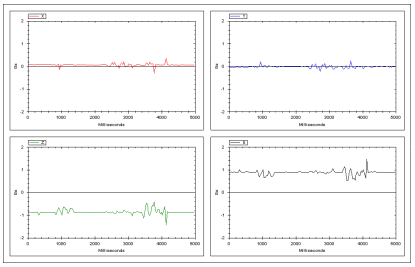
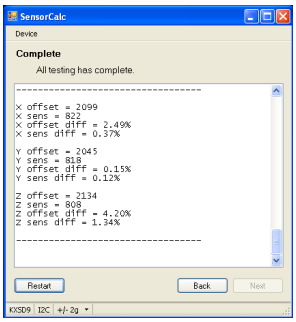
Accelerometer Application and Firmware Development Kit

SensorScope

This application allows the user to monitor data coming from the attached sensor. This data can be saved to file or viewed in real time. With only two verification steps, the application will begin immediately to display a series of graphs representing acceleration with respect to time.



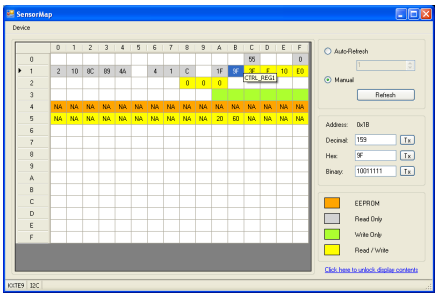


SensorCalc

This application allows the user to test and calculate the 0g offset and sensitivity parameters of the accelerometer. Once the accelerometer is properly placed relative to the Earth's gravity, simple mouse clicks initiate a series of test sequences that result in the display of raw-count data.

SensorMap

This application allows the user to read and write to specific registers on the sensor. The registers, and their values, are all displayed simultaneously on one color-coded grid.



Embedded Functions

Kionix is continually developing accelerometer products with embedded features. These features include the ability of the accelerometer to indicate screen rotation state, whether or not a tap or double-tap event has occurred, and the ability to indicate activity or inactivity. This development kit can give visual indications of the tap/double-tap interrupt, motion interrupt, and screen rotation state through a series of LED's that are connected to several ports of the Silicon Labs C8051F340DK.

Ordering Guide

Part Number	Product	Description
USBDEVKIT*	Accelerometer Application and Firmware Development Kit	C8051F340DK + F340 Adapter + Eval Board + Software
The USBDEVKIT may be purchased without the Silicon Labs C8051F340DK microprocessor as indicated below.		
KXDEVKIT*	USB Developers Kit	F340 Adapter + Eval Board + Software

** These kits are suitable currently for the KXTF9-2050, KXTE9-2050, KXR94-2353, KXP94-2050, KXSC7-2050, KXD94-2050, KXSD9-2050, KXRB5-2050, KXPB5-2050, KXPS5-2050, KXSS5-2057, KXUD9-2050, and KXTC9-2050 accelerometers. Customers must specify which accelerometer product is preferred.*

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