

WIRELESS & SENSING PRODUCTS

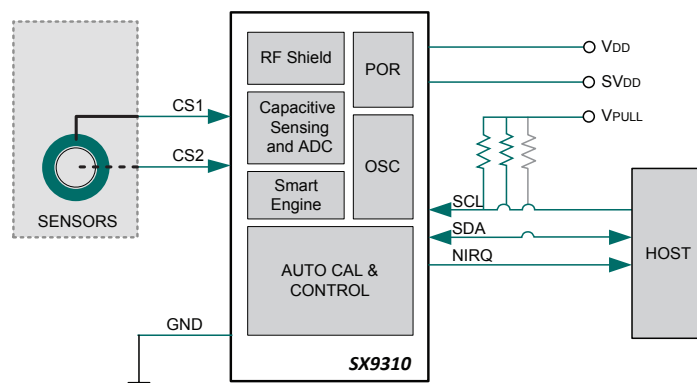
Features

- 2.7V – 5.5V core supply (VDD)
 - ♦ 1.65V – 2V host interface supply (SVDD)
 - ♦ 1.65V – 5.5V compliant host interface (VPULL)
- Up to three SAR capacitive sensor inputs
 - ♦ Patented on-chip smart engine for SAR (Body versus inanimate object detection)
 - ♦ Capacitance resolution down to 0.08fF
 - ♦ Capacitance offset compensation up to 100pF
 - ♦ Integrated RF shield
 - ♦ Advanced temperature compensation
- Automatic calibration
- Built-in startup proximity detection
- Ultra-low power consumption
 - ♦ Active mode: 70µA
 - ♦ Doze mode: 8µA
 - ♦ Sleep mode: 2.5µA
- 400kHz I2C serial interface
- Programmable interrupt or real-time status pin
- User NVM for custom default registers values (Standalone mode)
- Two reset sources: POR and soft reset
- -40°C to +85°C operation
- Compact Size: 1.362 x 1.332mm WLCSP package
- Pb & halogen free, RoHS/WEEE compliant

Applications

- Mobile phones
- Wearable devices
- Tablets
- Notebooks
- Mobile hotspots

Typical Application Circuit



Description

The SX9310 is a capacitive Specific Absorption Rate (SAR) controller. The SX9310 can use two of the three sensor inputs coupled to its smart engine for SAR to accurately discriminate between an inanimate object and human body. The third sensor input can be used independently for standard capacitive sensing.

The resulting detection is used in portable electronic devices to reduce and control radio-frequency (RF) emission power in the presence of a human body, enabling significant performance advantages for manufacturers of electronic devices with electromagnetic radiation sources to meet stringent emission regulations' criteria and SAR standards.

The SX9310 operates directly from an input supply voltage of 2.7V to 5.5V, while the I2C serial communication bus port is compatible with 1.8V host control to report body detection/proximity and to facilitate parameter settings adjustment. Upon proximity detection, the NIRQ output asserts, enabling the user to either determine the relative proximity distance, or simply obtain an indication of detection.

The SX9310 includes an on-chip auto-calibration controller that regularly performs sensitivity adjustments to maintain peak performance over a wide variation of temperature, humidity and noise environments, providing simplified product development and enhanced performance.

Ordering Information

Part Number	Package	Marking	Units/Reel
SX9310ICSTRT	WLCSP-9	MO8B	3000
SX9310EVKA	Eval. Kit	-	-



Important Notice

Information relating to this product and the application or design described herein is believed to be reliable, however such information is provided as a guide only and Semtech assumes no liability for any errors in this document, or for the application or design described herein. Semtech reserves the right to make changes to the product or this document at any time without notice. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. Semtech warrants performance of its products to the specifications applicable at the time of sale, and all sales are made in accordance with Semtech's standard terms and conditions of sale.

SEMTECH PRODUCTS ARE NOT DESIGNED, INTENDED, AUTHORIZED OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT APPLICATIONS, DEVICES OR SYSTEMS, OR IN NUCLEAR APPLICATIONS IN WHICH THE FAILURE COULD BE REASONABLY EXPECTED TO RESULT IN PERSONAL INJURY, LOSS OF LIFE OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. INCLUSION OF SEMTECH PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE UNDERTAKEN SOLELY AT THE CUSTOMER'S OWN RISK. Should a customer purchase or use Semtech products for any such unauthorized application, the customer shall indemnify and hold Semtech and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs damages and attorney fees which could arise.

The Semtech name and logo are registered trademarks of the Semtech Corporation. All other trademarks and trade names mentioned may be marks and names of Semtech or their respective companies. Semtech reserves the right to make changes to, or discontinue any products described in this document without further notice. Semtech makes no warranty, representation or guarantee, express or implied, regarding the suitability of its products for any particular purpose. All rights reserved.

© Semtech 2017

Contact Information

Semtech Corporation
Wireless & Sensing Products
200 Flynn Road, Camarillo, CA 93012
Phone: (805) 498-2111, Fax: (805) 498-3804
www.semtech.com