PerSe®
Smart Sensing

Solutions Selector Guide
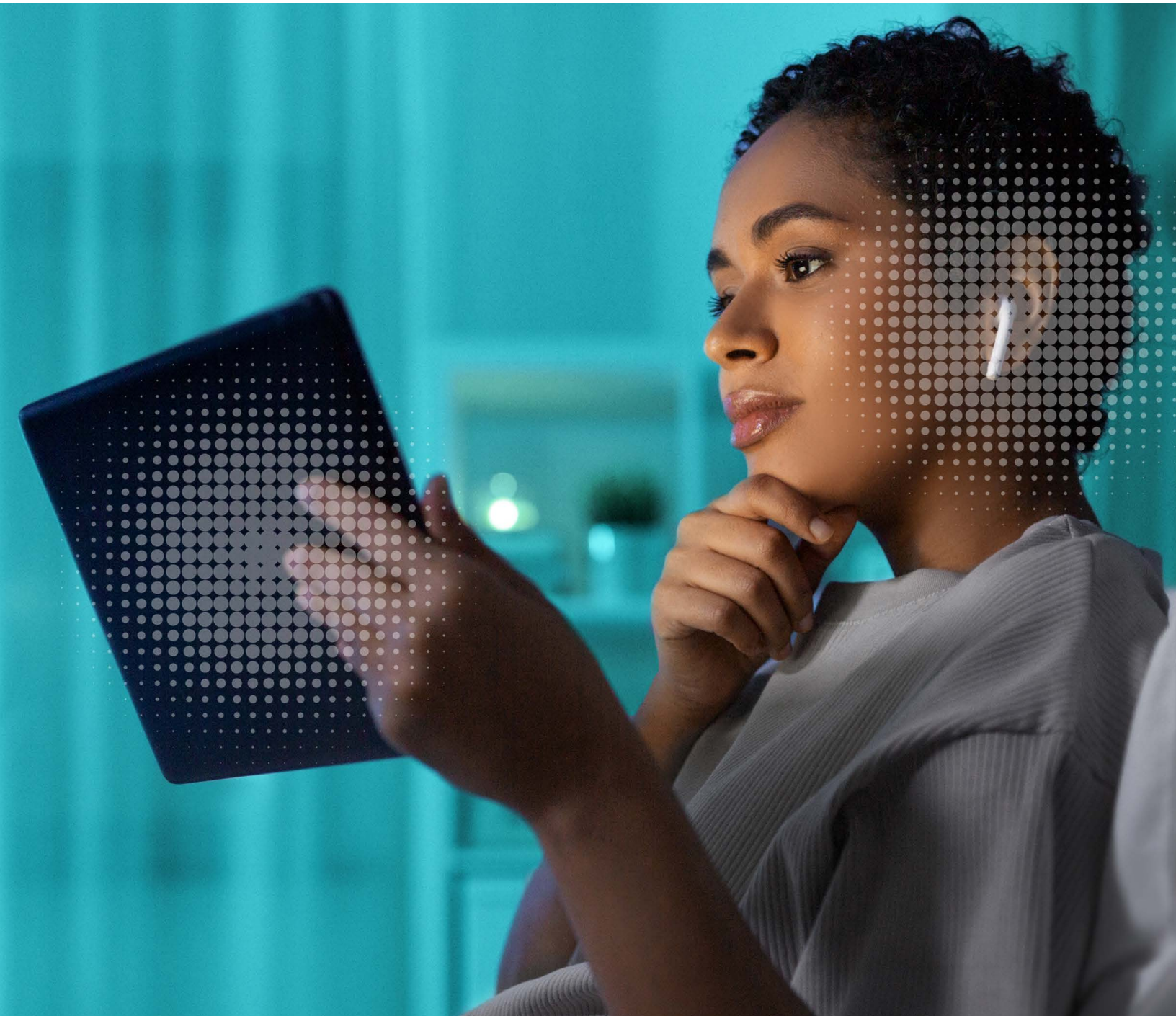
PerSe®
by Semtech

SEMTECH®

contents

PerSe®
by Semtech

Innovative Human Detection
for Smarter Sensing Applications

PerSe by Semtech is for every personal connected consumer device. PerSe technology offers best-in-class sensing performance and is commonly used in a wide range of applications such as smartphones, laptops, tablets, and wearables.

Our PerSe product line features three core product portfolios – PerSe Connect, PerSe Connect Pro and PerSe Control. PerSe sensors intelligently sense human presence near a mobile device and enable advanced radio frequency (RF) control when a user is in close proximity — delivering high quality connectivity and throughput in smartphones, laptops and wearables, while providing compliance with global safety standards.

Only PerSe can intelligently sense human presence to enable a smart response

Learn more by downloading our infographic at
semtech.com/PerSe

PerSe®
by Semtech

PerSe® Connect

## High Performance SAR Sensor

PerSe Connect enhances connectivity for a wide range of wireless technologies such as 5G sub-6/4G/Wi-Fi in smartphones, tablets and laptops.

SX9376 is part of Semtech's PerSe Connect portfolio. It offers up to 8 sensor inputs to support advanced radio frequency (RF) control for performance optimization and worldwide Specific Absorption Rate (SAR) regulation compliance. Its high sensing performance and high DC offset compensation capability make it the ideal choice for applications such as smartphones, tablets and laptops.

APPLICATIONS

- Smartphones (5G sub-6/4G/Wi-Fi)
- Tablets (5G sub-6/4G/Wi-Fi)
- Laptops (5G sub-6/4G/Wi-Fi)
- Other wireless portable devices
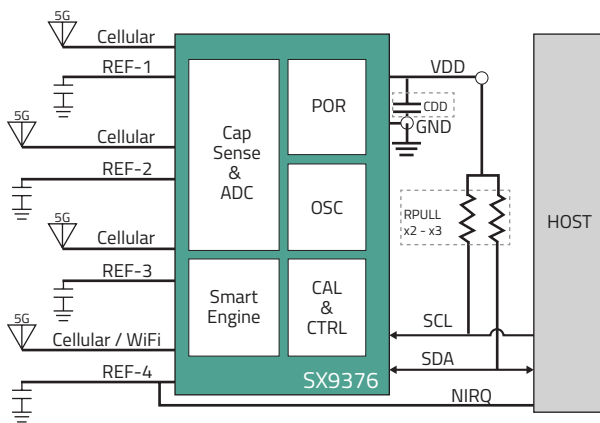
FEATURES

- 1.8V input supply voltage
- I2C serial interface (I3C Capable)
  - 4 I2C addresses selectable by 2 pins
- Up to 8 capacitive sensing inputs
  - Patented on-chip smart human sensing
  - Capacitance resolution down to 0.74aF
  - Capacitance offset compensation up to 600pF
  - Capable of digital output for status
- Flexible event/status handling
  - Can be paused automatically for event handling
- Automatic calibration
- Ultra low power consumption
  - Active mode: 29 uA
  - Doze mode: 7 uA
  - Sleep mode: 1.2 uA
- -40°C to +85°C operation
- Compact package size
  - 1.8 mm x 1.9 mm x 0.55 mm QFN
- Pb & Halogen free, RoHS/WEEE compliant

PerSe Connect					
Part Number	Sensor Inputs	Supply Voltage	Resolution	Offset Compensation	Package (mm)
SX9376	8	1.8V	0.74aF	600pF	QFN (1.80 x 1.90)
SX9338	5	3.3V	5aF	220pF	DFN (1.80 x 2.10)
SX9330	4	3.3V	1aF	300pF	WLCSP (1.25 x 1.26)
					DFN (1.60 x 1.90)
SX9328	3	1.8V	8aF	180pF	WLCSP (0.92 x 1.69)
SX9320	2	1.8V	4aF	200pF	WLCSP (0.92 x 1.69)

PerSe® Connect Pro

Ultra-High Performance Power Density Sensor

PerSe Connect Pro is a portfolio of Power Density (PD) sensors that improves connectivity in smartphones, tablets and laptops. The focus of PerSe Connect Pro is high performance and high band 5G mmWave applications.

The SX9340 is the world's first ultra-high performance power density sensor. It is a part of the Semtech PerSe Connect Pro portfolio which maximizes connectivity for high band 5G mmWave applications. It provides multiple-channels to support sophisticated radio frequency (RF) management for improved performance and regulatory compliance worldwide. Its extraordinary sensing performance and robust immunity make it the ideal choice for 5G mmWave smartphones, tablets and laptop applications.

APPLICATIONS

- Smartphones (5G mmWave)
- Tablets (5G mmWave)
- Laptops (5G mmWave)

FEATURES

- Multi-channel sensor inputs designed for Power Density (PD) applications
- Ultra-high resolution sensing for several centimeter range detection
- Semtech patented smart engine
- Advanced temperature compensation
- Automatic calibration
- Ultra-low power consumption
- 400KHz I²C serial Interface
- Compact footprint

Designed for 5G mmWave

PerSe Connect Pro			
Part Number	Supply Voltage	Interface	Package
SX9340	3.3V	I²C	DFN

PerSe® Control

Low Power Human Sensor

PerSe Control enables intuitive control and elevates user experience in wearable products. Auto on/off detection, advanced gesture/media control and smart assistant activation are features commonly supported by our human sensor.

Semtech SX9210 is part of the PerSe Control portfolio. It offers 3 sensor inputs to support features such as in-ear/on-wrist control as well as gesture detection. With ultra-low power consumption and a tiny footprint, it is the ideal choice for applications such as earbuds, smartwatches or fitness trackers.
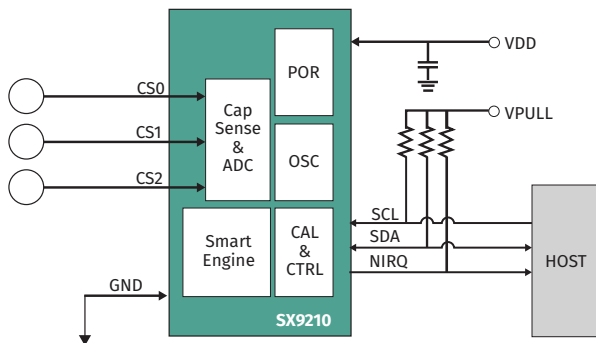

APPLICATIONS

- Wearables
- Hearables

FEATURES

- 3-channel sensor inputs
  - Stable proximity sensing with temperature
  - High resolution capacitive sensing down to 0.008fF
  - Capacitance offset compensation up to 75pF
- Input supply voltage: 1.7V - 2.0V
- Active sensor guarding
- Ultra-low power
  - Doze mode: 6µA
  - Sleep mode: 1.75µA
- Automatic calibration
  - Eliminates false triggers due to environmental factors
- 400kHz I²C serial interface
  - 2 sub-addresses selectable by pin
- Compact size: 0.92 mm x 1.69 mm WLCSP package

PerSe Control					
Part Number	Sensor Inputs	Supply Voltage	Resolution	Offset Compensation	Package (mm)
SX9211	1	3.3V	23aF	75pF	DFN (1.4 x 1.4)
SX9210	3	1.8V	8aF	75pF	WLCSP (0.92 x 1.69)
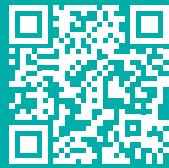
For a detailed list of sales representatives
in your area please visit **semtech.com/sales**

SEMTECH®

Semtech Corporation (Nasdaq: SMTC) is a high-performance semiconductor, IoT systems, and Cloud connectivity service provider dedicated to delivering high-quality technology solutions that enable a smarter, more connected, and sustainable planet. Our global teams are committed to empowering solution architects and application developers to develop breakthrough products for the infrastructure, industrial and consumer markets.

200 Flynn Road, Camarillo, California 93012 | 805-498-2111

semtech.com | f 🐦 ▶ in Find us, like us, follow us