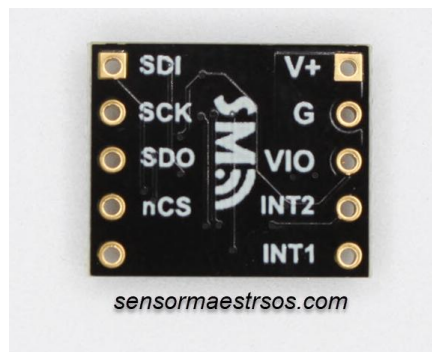
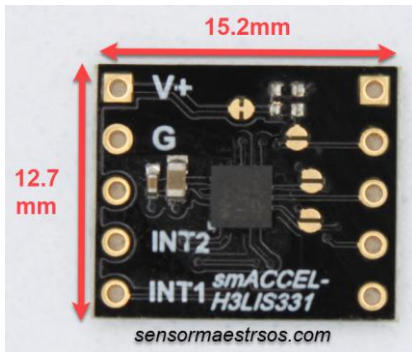


12.7x15.2mm 100,200,400G Accelerometer



Features

- I2C/SPI Interface to H3LIS331DL(Default = SPI)
 - Use Solder Bridges for I2C Operation
- 12.7x15.2mm Breakout Board
- H3LIS331: 3-Axis Accelerometer
 - Accel $\pm 100/200/400$ g full scale
 - 2.16-3.6V, VDDIO down to 1.8V
 - Low Power down to 10uA
 - SPI/I2C(Default = SPI)
 - 2 Interrupt Lines
- ODR Rates: 0.5-1000Hz
- 3.0x3.0x1.0mm package
- 10,000g Shock survivability
- Breakout board designed to allow separate IO and Core voltages
- smWSP-ARD and smWSP compatible Plugin
- **OPEN SOURCE Nordic nRF FIRMWARE COMING SOON!!**

Applications

- Wearables
- Motion Tracking and Gesture Recognition
- Dead-Reckoning
- EIS and OIS for Camera application
- Augmented Reality(AR) / Virtual Reality(VR)
- Indoor Navigation
- IoT Applications
- Smart Toys and Smart Sporting Goods

Description:

The smACCEL-H3LIS331DL breakout board features the 3-Axis High-G Accelerometer H3LIS331DL on a micro-sized 12.7x15.2mm breakout board. The H3LIS331DL can be configured for a SPI or I2C interface. The breakout board is configured by default for a SPI interface to the H3LIS331DL but can easily be re-configured for an I2C interface using the solder bridges that are on the board SB2/SB3/SB4. The board allows for separate VDD and VDDIO voltages by default VDD is connected to VDDIO through a solder bridge SB1. The board also maps out both H3LIS331DL Interrupt Pins. The smACCEL-H3LIS331DL breakout board can be used with the smWSP-ARD Rapid Prototyping platform Arduino shield and can be used in the smBLOCK SPI or the smBLOCK I2C1(if it was re-configured to use I2C). It is compatible with the smWSP Rapid prototyping platform which plugs into any of the SiLabs EFM/EFR32 STK's with the 20pin Male connector.

Design Services

Custom Embedded PCB/Software, Wireless/Mobile Applications, and general design services can be provided by Sensor for your own application. To have Sensor Maestros review your project needs please go to www.sensormaestros.com and fill out a Project Questionnaire form on the Design Services page.

H3LIS331 Datasheet:

<https://www.st.com/resource/en/datasheet/h3lis331dl.pdf>

AN5881 H3LIS331 Appnote:

https://www.st.com/resource/en/application_note/an5881-h3lis331dl-highg-400-g-full-scale-lowpower-3axis-digital-accelerometer-stmicroelectronics.pdf

DT0105 1-point or 3-point tumble sensor calibration:

https://www.st.com/resource/en/design_tip/dt0105-1point-or-3point-tumble-sensor-calibration-stmicroelectronics.pdf

DT0126 Low-Power application design with ST's MEMS Accelerometers:

https://www.st.com/resource/en/design_tip/dt0126-lowpower-application-design-with-sts-mems-accelerometers-stmicroelectronics.pdf

DT0127 ST's MEMS accelerometer sensor testing and self-test

https://www.st.com/resource/en/design_tip/dt0127-sts-mems-accelerometer-sensor-testing--selftest-stmicroelectronics.pdf

DT0106 Residual linear acceleration by gravity subtraction to enable dead-reckoning

https://www.st.com/resource/en/design_tip/dt0106-residual-linear-acceleration-by-gravity-subtraction-to-enable-deadreckoning-stmicroelectronics.pdf

DT0076 Compensating for accelerometer installation error: zeroing pitch and roll for a reference orientation

https://www.st.com/resource/en/design_tip/dt0076-compensating-for-accelerometer-installation-error-zeroing-pitch-and-roll-for-a-reference-orientation-stmicroelectronics.pdf

BUY IT NOW:

[H3LIS331DL 400G 3-Axis Accelerometer Breakout Board](#)

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Rapid Prototyping Platforms-Use with Sensor Maestros Breakout Boards

We designed this and all our breakout boards to be compatible with our smWSP-ARD Wireless Sensor Rapid Prototyping Kits. These kits all have standardized sockets for breakout boards we call smBLOCKS. The boards have I2C, SPI, RF, USB-UART, and Power Management smBLOCKs. These platforms make it easy to quickly put together an embedded system with pluggable sensors, power management and RF blocks of your choosing. These can all be removed and then replaced with different options the next day for your convenience.

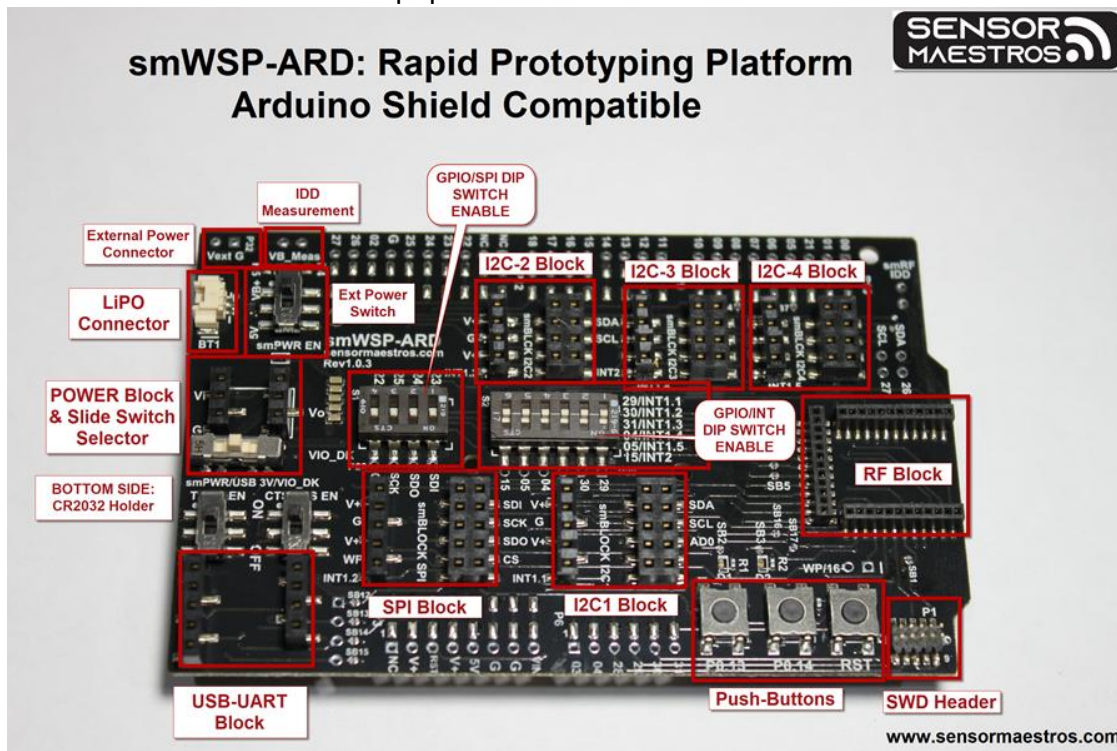
smWSP-ARD

This kit is an Arduino R3 compatible shield that works with any Arduino board such as the nRF52 DK Series, STM32 Nucleo Series, Kinetis Series along with numerous other Arduino compatible shield boards. It can also operate as a Stand-Along platform with a smRF-xxxx wireless module plugged into the RF Block. The smWSP-ARD has 4 I2C smBlocks, 1 SPI smBlock, 1 smCOM Block(USB-UART), 1 smPWR Block(Power Management: DC/DC Converter, LDO) and 1 smRF Block(Wireless Connectivity).

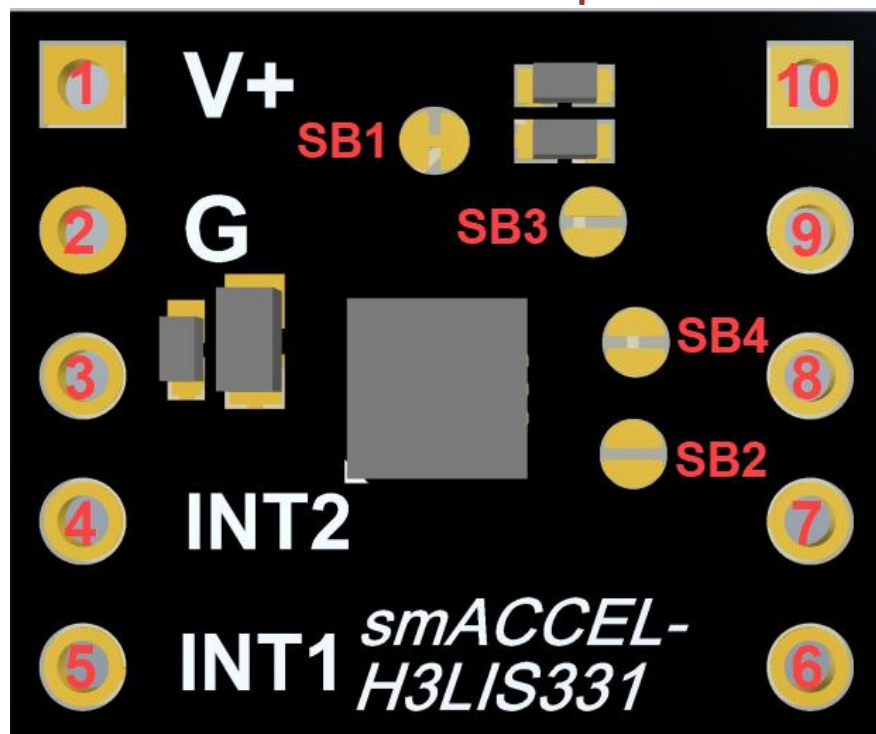
smWSP-ARD Arduino Rapid Prototyping Shield

smACCEL-H3LIS331DL Breakout Board can be plugged into the SPI smBLOCK or the I2C1 smBLOCK shown in the image below.

Picture of the smWSP-ARD unpopulated:



smACCEL-H3LIS331DL Pin Descriptions



Pin	Name	Type	Function
1	VDD	Power	Power Supply, 2.16-3.6V
2	GND	Power	Ground. Connect to System GND.
3	VDDIO	Power	ALL: VDD for GPIO. VDDIO is tied to VDD by default through SB1. Cut SB1 trace and provide separate VDD to VDDIO if different GPIO voltage is needed.
4	INT2	I/O	Programmable Interrupt 2 (INT2)
5	INT1	Output	Programmable Interrupt 1 (INT1)
6	NC	NC	No Connect
7	nCS/Mode	Input	CS for SPI. Mode: (1 = I2C mode; 0 = SPI Enabled)
8	SDO/A0	I/O	SPI Mode = Serial data output I2C Mode = LSB of I2C Address
9	SCL/SCK	I/O	SPI & I2C Mode = Serial Clock
10	SDA/SDI	I/O	SPI Mode = Serial Data Input I2C Mode = Serial Data
	SB1		Connects VDD to VDDIO; DEFAULT = CONNECTED
	SB2		Connects VDDIO to SDA; DEFULAT = OPEN
	SB3		Connects VDDIO to SCL; DEFAULT = OPEN
	SB4		Connects VDDIO to nCS/MODE; DEFAULT = OPEN

