

## Low Noise, Low Power, Wide Bandwidth, 3-Axis MEMS Accelerometer

### FEATURES

- ▶ Ultralow noise density:  $44\mu\text{g}/\sqrt{\text{Hz}}$  (XY) and  $55\mu\text{g}/\sqrt{\text{Hz}}$  (Z)
- ▶ Low power consumption:  $520\mu\text{A}$
- ▶ Wide bandwidth: 8kHz
  - ▶ Relative flatness with digital correction (<7.6kHz): 0.5dB
  - ▶ Relative flatness without digital correction (<5kHz): 3.5dB
- ▶ Low latency
  - ▶ Group delay <85 $\mu\text{s}$  for I<sup>2</sup>S/TDM
  - ▶ Group delay <25 $\mu\text{s}$  for PDM
- ▶ Digital features
  - ▶ 16-bit ADC
  - ▶ Multiprotocol serial interfaces: SPI or I<sup>2</sup>C
  - ▶ Multiprotocol audio data output: I<sup>2</sup>S, TDM, and PDM
  - ▶ Programmable LPF and HPF
  - ▶ Data synchronous or asynchronous sampling
  - ▶ Output FIFO: 320 word
- ▶ Built-in features for system-level power savings
  - ▶ Configurable interrupt modes
- ▶ Integrated temperature sensor
- ▶ Voltage range options
  - ▶  $V_S$  with internal regulators: 2.25V to 3.6V (or  $V_{1P8}$  at 1.8V)
  - ▶  $V_{DDIO}$ : 1.14V to 3.6V (1.62V to 3.6V for full temperature range)
- ▶ Electromechanical self test
- ▶ 10,000g mechanical shock
- ▶ RoHS compliant
- ▶ Operating temperature range: -40°C to +125°C
- ▶ 14-terminal, 2.9mm × 2.8mm × 0.87mm, LGA package
- ▶ AEC-Q100 qualified for automotive applications

### FUNCTIONAL BLOCK DIAGRAM

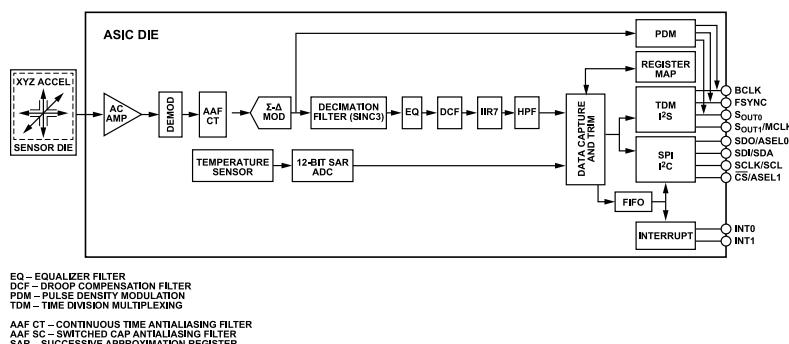


Figure 1. Functional Block Diagram

For more information on the ADXL319, contact your local Analog Devices, Inc., [sales](#) office or contact [mems\\_support@analog.com](mailto:mems_support@analog.com).

Rev. Sp0

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**NOTES**