

## FEATURES

- High performance, triaxial digital output accelerometer**
- $\pm 14.2\text{ g}$  full-scale range at 16-bit resolution (0.434 mg/LSB)**
- 2 kHz output sample rate with optional data FIFOs**
- Programmable filter response**
- 20 Hz, 46 Hz, 92 Hz, 184 Hz**
- Continuous electromechanical self test**
- Additional key-on and on demand self test routines**
- Temperature compensated, high precision zero-g bias and sensitivity performance**
- X-/Y-/Z-axis offset adjust**
- Low quiescent current draw**
- High linearity performance**
- Qualified for automotive applications**
- $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$  temperature range**

## APPLICATIONS

- Vehicle dynamic control (VDC)**
- Electronic stability program (ESP)**
- Electronic chassis control**
- Platform stabilization/leveling**

## GENERAL DESCRIPTION

The ADXL703 device is a high precision, triaxial accelerometer designed for electronic stability control and other high performance applications. A built in temperature compensation routine ensures sensitivity stability to better than  $\pm 3\%$  across the entire temperature range. The ADXL703 is designed with selectable  $-3\text{ dB}$  filter corner frequencies to satisfy a range of applications, and the 2 kHz output data rate allows sufficient oversampling of the acceleration information.

The acceleration data output from the device is a true 16-bit word and is contained in a 32-bit SPI transaction. The SPI interface contains additional fault detection bits and data formatting bits designed to assist high reliability applications. SPI communications are compatible up to 8 MHz. The 16-bit acceleration data-word offers a resolution of 0.434 mg/LSB for the  $\pm 14.2\text{ g}$  full-scale range of the device.

The ADXL703 is available in an SOIC package with an inverted paddle for improved EMI/RFI robustness. The ADXL703 operates at both 3.3 V and 5 V, and is specified to operate across the full automotive temperature range of  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$ .

## FUNCTIONAL BLOCK DIAGRAM

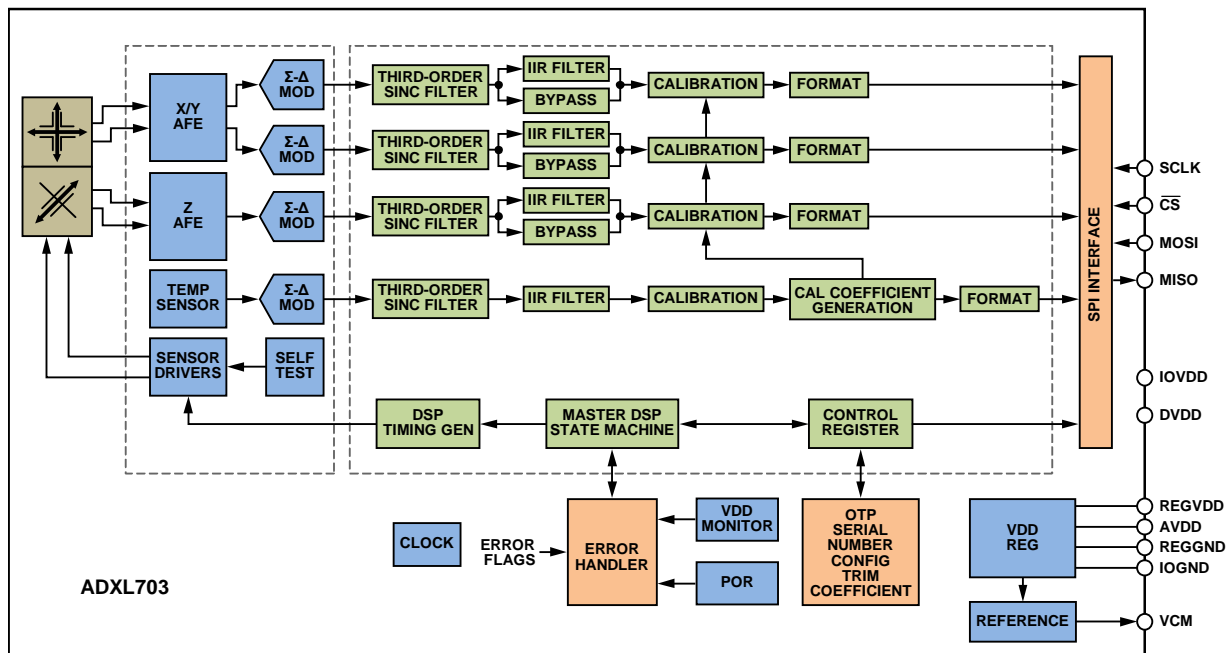


Figure 1.

For more information about the ADXL703, contact the Analog Devices, Inc., [Customer Interaction Center](http://www.analog.com/en/content/technical_support_page/fca.html) at [http://www.analog.com/en/content/technical\\_support\\_page/fca.html](http://www.analog.com/en/content/technical_support_page/fca.html) to connect with a technical support specialist.

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