

## 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**  
 $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$  temperature range  
**Qualified for automotive applications**

## APPLICATIONS

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

## GENERAL DESCRIPTION

The ADXL700 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 ADXL700 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 ADXL700 is available in an SOIC package with an inverted paddle for improved EMI/RFI robustness. The ADXL700 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

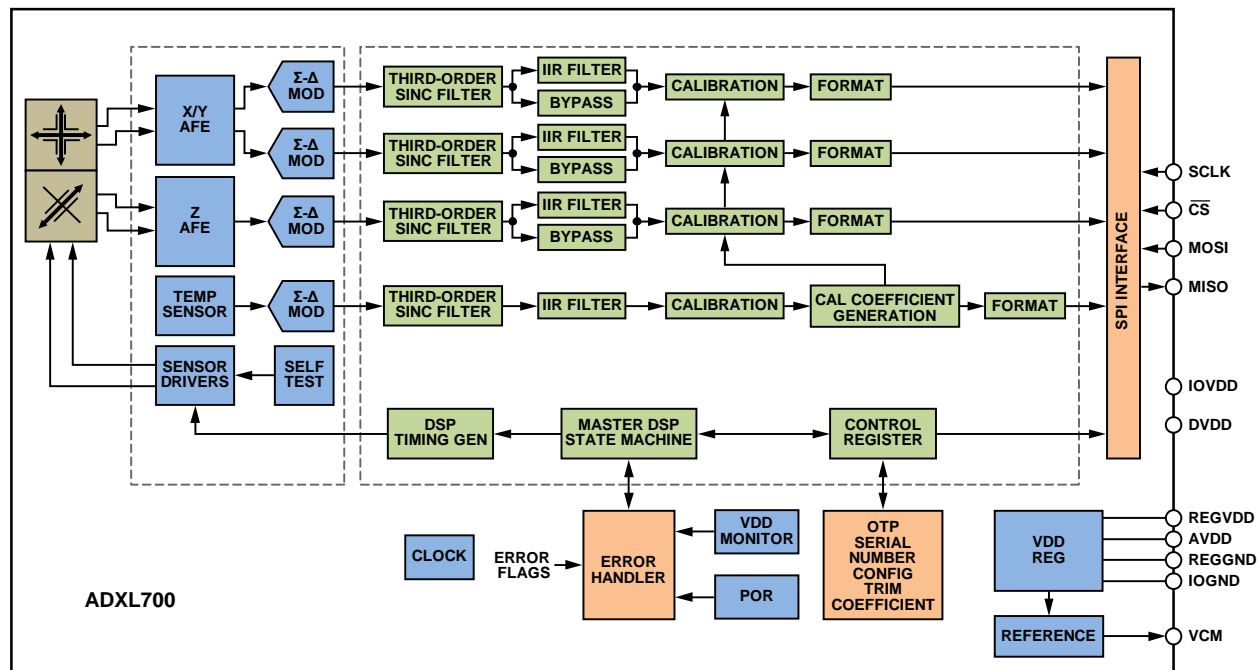


Figure 1.

For more information about the ADXL700, please 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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