

Evaluating the **ADXL377** 3-Axis Accelerometer

GENERAL DESCRIPTION

The EVAL-ADXL377Z is a simple evaluation board that allows quick evaluation of the performance of the **ADXL377** high-*g* 3-axis accelerometer. The EVAL-ADXL377Z has a 6-pin, 0.1 inch spaced header for access to all power and signal lines that the user can attach to a prototyping board (breadboard) or to a wire using a standard plug. Four holes are provided for

mechanical attachment of the EVAL-ADXL377Z to the application.

The dimensions of the EVAL-ADXL377Z are 20.3 mm × 20.3 mm (0.8 inch × 0.8 inch). Four 3.05 mm diameter (0.12 inch) mounting holes are arranged in a 14.5 mm × 14.5 mm (0.575 inch × 0.575 inch) square around the center of the printed circuit board (PCB).

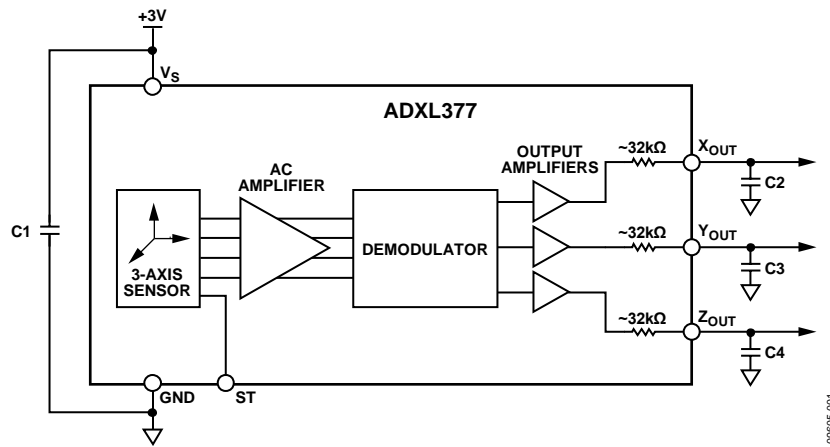


Figure 1. Schematic

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REVISION HISTORY

9/12—Revision 0: Initial Version

CIRCUIT DESCRIPTION

The schematic of the EVAL-ADXL377Z is shown in Figure 1. The [ADXL377](#) can be operated using a supply voltage ranging from 1.8 V to 3.6 V and draws 300 μ A at a 3 V supply.

Analog bandwidth can be set by changing the C2, C3, and C4 capacitors. See the [ADXL377](#) data sheet for a complete description of the operation of the accelerometer.

The board layout of the EVAL-ADXL377Z is shown in Figure 2. The EVAL-ADXL377Z has four factory-installed capacitors (see Figure 1). C1 (100 nF) at V_S is a bypass capacitor to reduce supply noise. C2, C3, and C4 at X_{OUT} , Y_{OUT} , and Z_{OUT} , respectively, are filter capacitors (10 nF) to set the bandwidth to 500 Hz.

Some applications may require a different bandwidth, in which case C2, C3, and C4 can be changed as appropriate. See the [ADXL377](#) data sheet for a complete description of the operation of the accelerometer.

A resistor, R1, (4.02 k Ω) is included to pull ST up to V_S .

SPECIAL NOTES ON HANDLING

The EVAL-ADXL377Z is not reverse polarity protected. Reversing the positive supply (V_S) and ground (GND) pins can cause damage to the [ADXL377](#).

Dropping the EVAL-ADXL377Z on a hard surface can generate an acceleration that may exceed the data sheet absolute maximum limits of 10,000 g. See the [ADXL377](#) data sheet for more information.

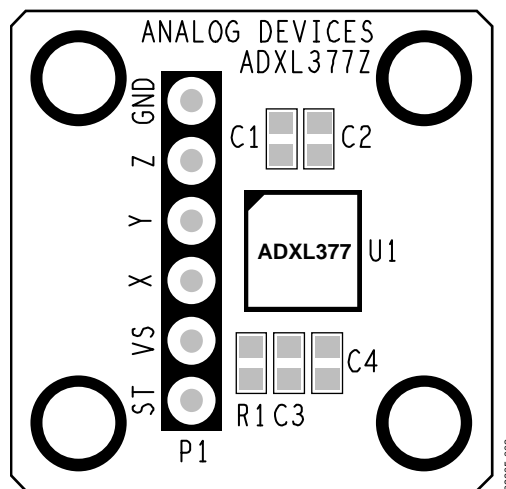


Figure 2. Physical Board Layout

NOTES

**ESD Caution**

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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