EVAL-ADXL366-SDP Customer Evaluation System

FEATURES

- Flexible inertial sensor evaluation platform
- Controller board and interface board operate with interchangeable evaluation boards
- Separates device under test (DUT) from controller for accurate environmental testing
- Saves data to file
- Standard USB cable for power and communications
- PC-based GUI
- Fast, easy installation

GENERAL DESCRIPTION

The EVAL-ADXL366-SDP is an simple customer evaluation system that gives users the ability to quick start testing and evaluation of the ADXL366 microelectromechanical systems (MEMS) accelerometer. The system consists of a main board (EVAL-SDP-CB1Z (SDP-B) system demonstration platform), an interface board (EVAL-SDP-INTER4-Z), and a satellite board (EVAL-ADXL366Z breakout board).

Figure 1 shows the full customer evaluation system setup. The SDP-B connects directly to a PC via an USB cable, with the USB connection providing both communications and power to the board. The SDP-B is connected to the EVAL-SDP-INTER4-Z interface board, which provides the signal conditioning and electrical connections to communicate with the EVAL-ADXL366Z breakout board.

The EVAL-ADXL366-SDP user guide provides an overview of how to use the application software, and the functionality of the software is described with examples where appropriate.

Note: Because the software used to evaluate the EVAL-ADXL366Z breakout board is the same software used to evaluate the ADXL367, some figures in this user guide reference the ADXL367.

CUSTOMER EVALUATION SYSTEM SETUP

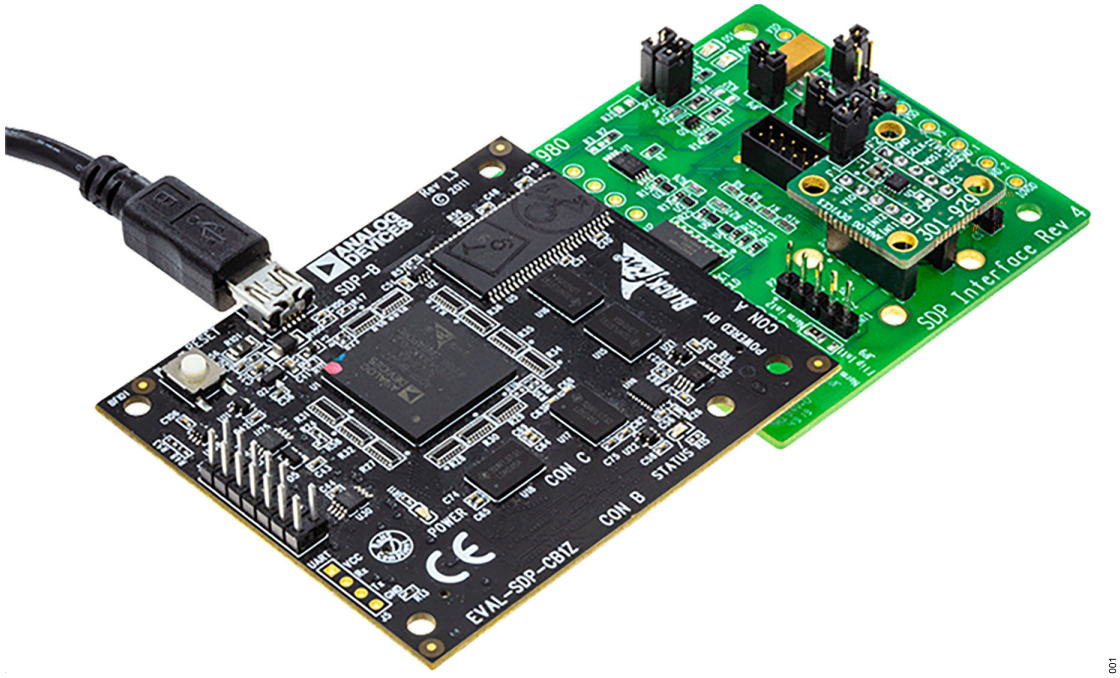

Figure 1. EVAL-ADXL366-SDP Customer Evaluation System Setup

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REVISION HISTORY

3/2026—Revision 0: Initial Version

SETTING UP THE EVALUATION SYSTEM

To connect the hardware components, take the following steps:

1. Slot the EVAL-ADXL366Z breakout board into the EVAL-SDP-INTER4-Z interface board.
2. Connect the EVAL-SDP-INTER4-Z to the EVAL-SDP-CB1Z main board by using edge connectors.
3. Connect the EVAL-SDP-CB1Z to a computer using the USB-B port on the side.

SOFTWARE INSTALLATION

The EVAL-ADXL366-SDP uses the same evaluation software as the EVAL-ADXL367-SDP. The following steps describe the installation process for the ADXL366 customer evaluation system:

1. Click here to download the customer evaluation software installer onto your PC. Either clone this GitHub repository onto your computer or simply click **Code/Download ZIP.**
2. Once downloaded, extract the files to the desired local drive.
3. Double click **ADXL367_Setup.exe** to start the installation process (see Figure 2).
4. Follow the on-screen instructions, including choosing the preferred installation path and accepting the license agreement, until the evaluation platform and SDP driver installation are complete, as shown in Figure 3.

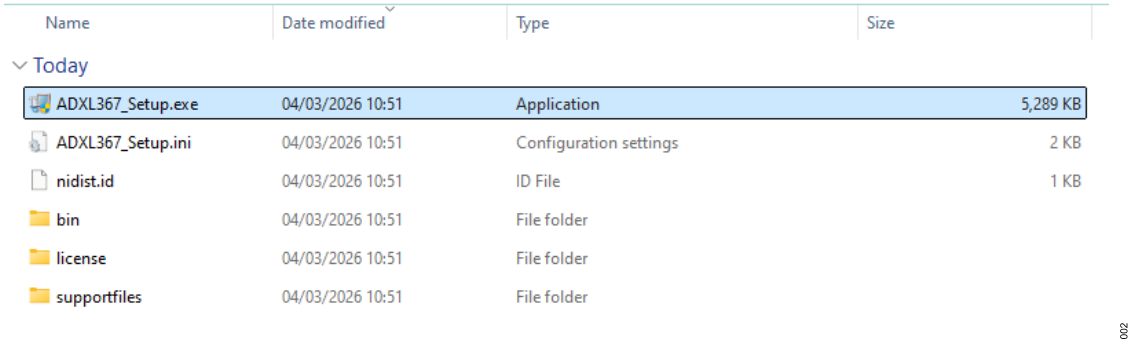


Figure 2. Start Installation

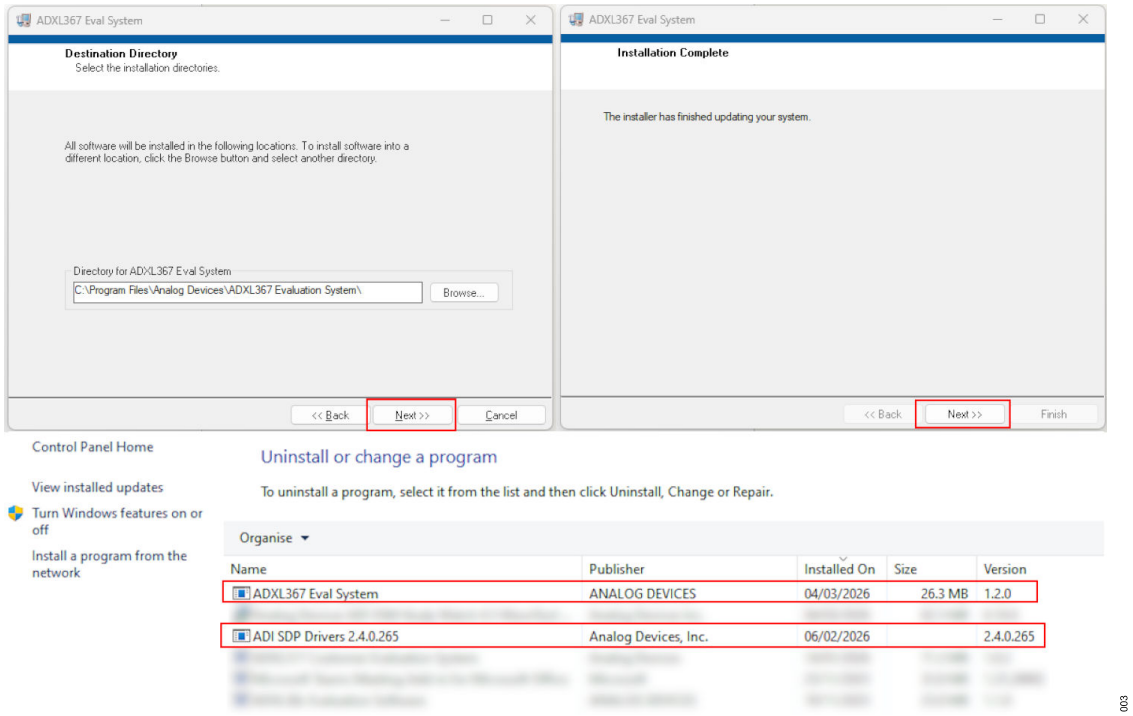


Figure 3. Installation Process

SETTING UP THE EVALUATION SYSTEM

SOFTWARE STARTUP

Take the following steps once the installation is completed to run through the installation directory:

1. Launch the **ADXL367 Evaluation Software** (see Figure 4), or the user can type **ADXL367 Evaluation Software** in the Windows® search bar and click the **enter** key on the keyboard to start the software.

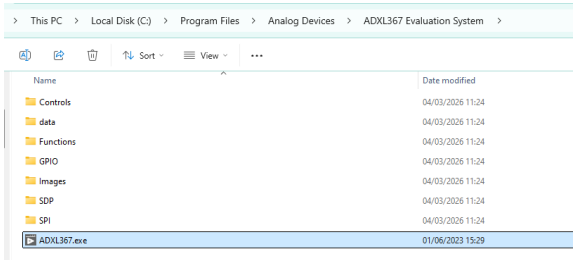


Figure 4. Run Software

2. Once the software launches, the **Hardware Select** window prompts the user to select the appropriate SDP interface board. For the EVAL-ADXL366-SDP, this is **Rev. 4**, as noted by the silkscreen in the lower right corner of the board (see Figure 5).

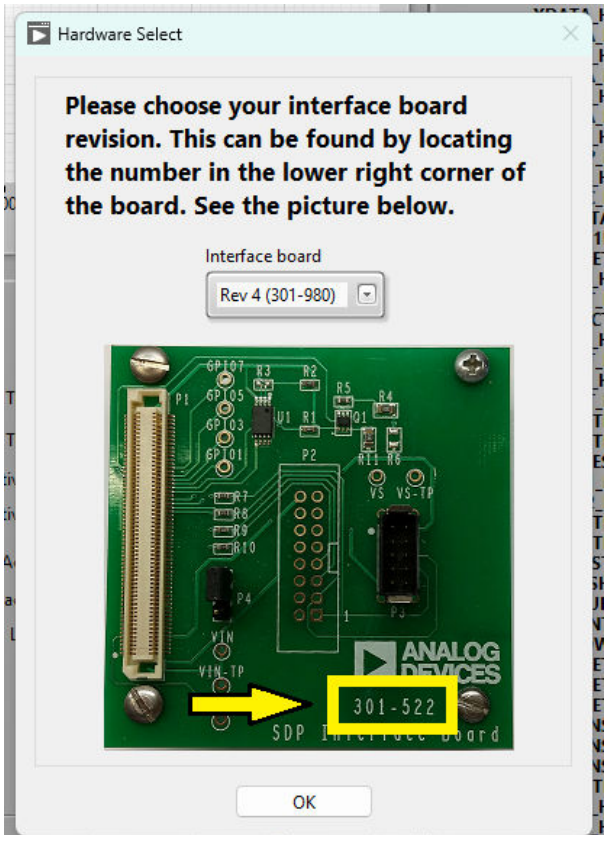


Figure 5. Hardware Select Window

- If everything works as expected, the system reads the register map from the accelerometer and displays it in the **ADXL367 Register Map** section of the GUI (see Figure 6).

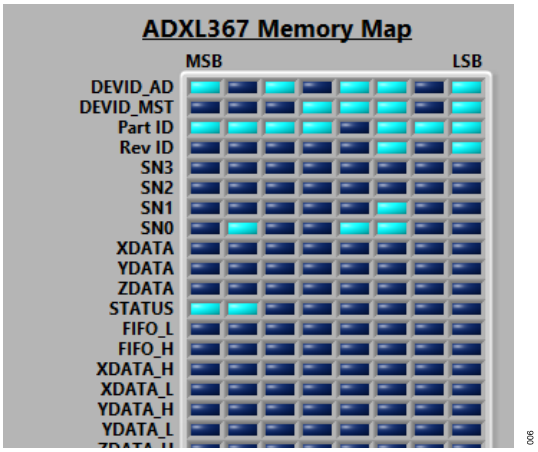


Figure 6. Register Map

- One way to verify that the system is working properly is to check that the **ADXL367 Register Map** fields read the expected values. For example, the **DEVID_AD** register must read **AD**.

3. If the hardware is not recognized, the user can resolve this issue by taking the following steps:

   a. Close the software completely.
   b. Reopen the software.
   c. If the hardware is still not recognized, attempt to disconnect and then reconnect the EVAL-ADXL366-SDP to the computer, ensuring that it is a secure connection.
   d. Once the hardware is successfully connected and recognized, the user can access the register map as described in Step 2.

ADXL366 GRAPHICAL USER INTERFACE (GUI)

Figure 7 shows the GUI of the EVAL-ADXL366-SDP evaluation software startup.

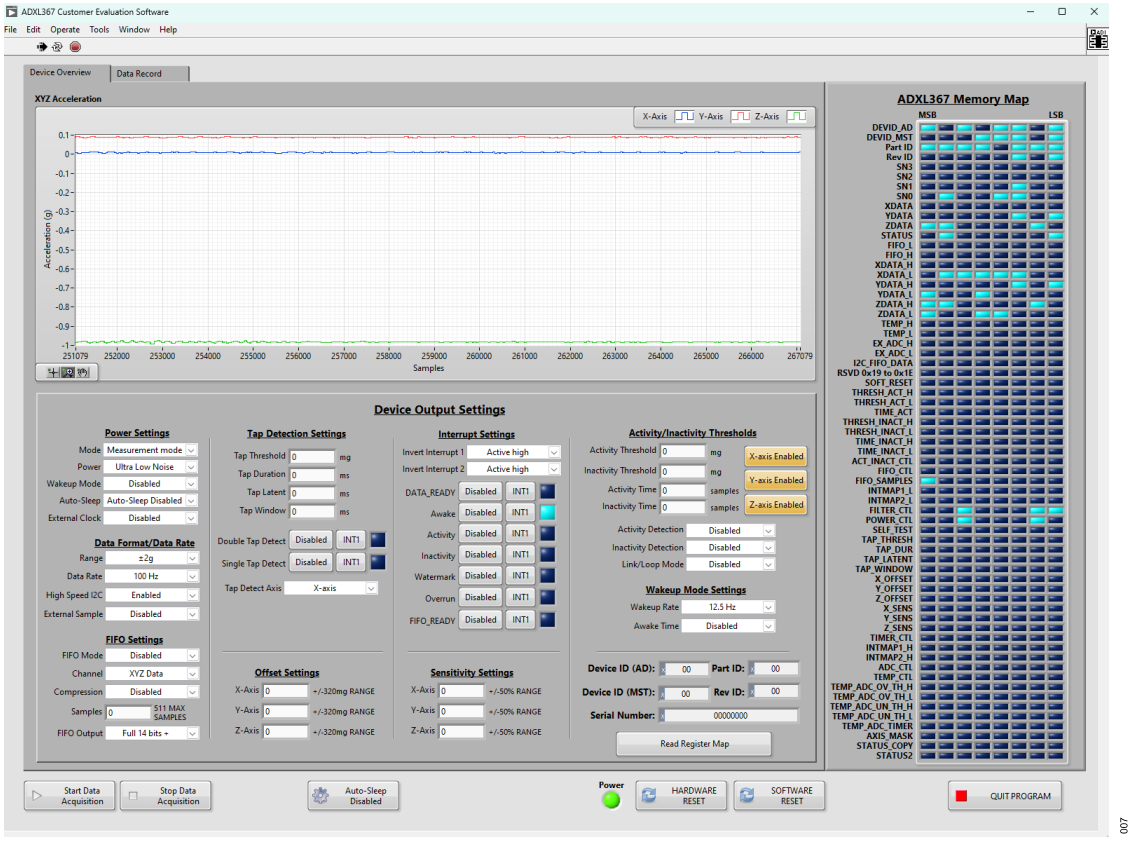


Figure 7. ADXL366 Evaluation Software Startup

ADXL366 GRAPHICAL USER INTERFACE (GUI)

GETTING STARTED

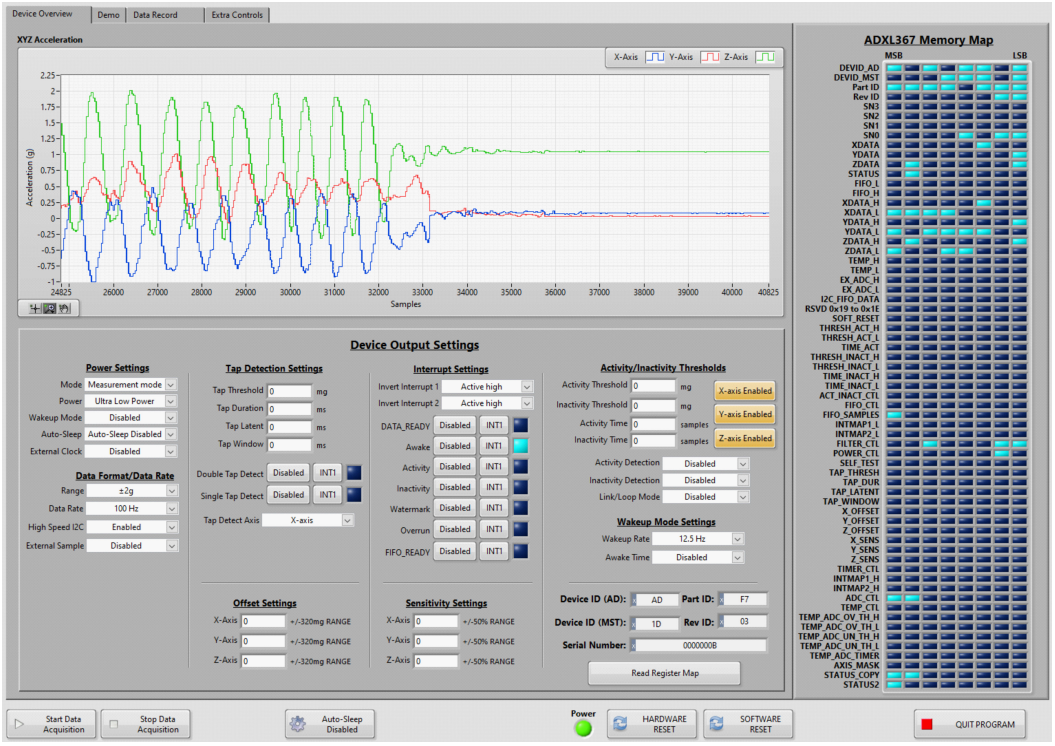
The EVAL-ADXL366-SDP customer evaluation system environment is divided into separate tabs, each of which specializes in commonly performed measurements for accelerometer devices. In this way, the evaluation system offers users an immediate ability to capture data for a wide variety of tests without the need to develop a customized hardware and software solution.

On each tab, the **Start Data Acquisition** button and **Stop Data Acquisition** button are the primary ways that the user can acquire data from the device.

DEVICE OVERVIEW TAB

In the **Device Overview** tab, the user can view acceleration data, read the device memory map, and adjust device settings. Additional functionality in this tab includes the ability to read the memory register or to take a snapshot of the current memory register values.

Click **Read Register Map** to get a snapshot of the current memory register values, which also updates the serial number, device ID, part ID, and Rev ID.



800

Figure 8. Device Overview Tab

ADXL366 GRAPHICAL USER INTERFACE (GUI)

DATA RECORD TAB

In the **Data Record** tab, the user can measure and record the acceleration sampled at the selected output data rate. Data results are saved to a text file with the date, time, device ID, and serial number recorded as a header.

To specify the file path, click the small folder icon found under the **Directory to Save File** section and browse to the desired folder location on your computer (see Figure 9). Note that, if an existing file is selected, data is appended to the end of the file.

In addition, the user can select a data rate from 12.5Hz to 400Hz within the **Data Rate Select:** dropdown menu (see Figure 9).

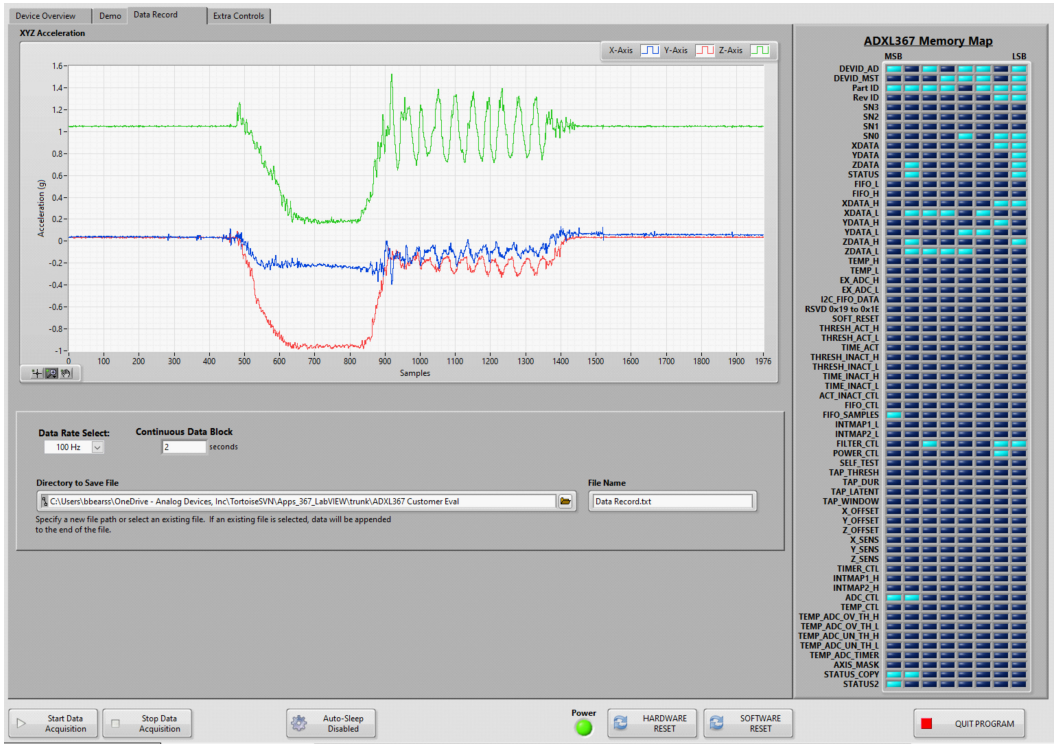


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Figure 9. Data Record Tab

NOTES

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