

Evaluating of Optical Sensors with the EVAL-ADPDM3Z Evaluation Board

FEATURES

ADPD1080 full configuration

- Register level

- Parameter level

Graph views

- Time series view

- Gesture recognition view

- Triangulation view

UDP transfer capability

EVALUATION KIT CONTENTS

- EVAL-ADPDM3Z standard evaluation board

- USB-C cable

ADDITIONAL EQUIPMENT NEEDED

- PC running Windows® 7 operating system

ONLINE RESOURCES

- [ADPD1080 data sheet](#)

- [ADPD2140 data sheet](#)

- [Applications Wavetool](#)

GENERAL DESCRIPTION

The EVAL-ADPDM3Z evaluation kit provides users with a simplified means of interfacing with optical sensor products from Analog Devices, Inc. Supported sensor daughter boards include the [EVAL-ADPD2140Z](#) and the [EVAL-ADPD1080Z-PRX](#).

The evaluation kit includes the EVAL-ADPDM3Z evaluation board (requires the [Applications Wavetool](#), which can be downloaded from the EVAL-ADPDM3Z product page). The evaluation board features a graphical user interface (GUI) that provides users with low level and high level configurability, real-time data analysis, and user datagram protocol (UDP) transfer capability so that the evaluation board can easily interface to a PC.

The USB port of the PC powers the EVAL-ADPDM3Z evaluation board and provides power to any connected daughter boards.

The evaluation board schematics indicate signal names for simplified identification (see Figure 8).

EVAL-ADPDM3Z EVALUATION BOARD PHOTOGRAPH



Figure 1.

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REVISION HISTORY

8/2018—Revision 0: Initial Version

EVALUATION BOARD SOFTWARE QUICK START PROCEDURES

INSTALLING THE APPLICATIONS WAVETOOL

Download the [Applications Wavetool](#) software package from the EVAL-ADPDM3Z product page. Unzip the downloaded software folder, run the enclosed **Applications_Wavetool.exe** file, and follow the prompts for installing the [Applications Wavetool](#) software (see Figure 2). For further information, follow the full installation guide included with the [Applications Wavetool](#) software in the downloaded folder.



Figure 2. Applications Wavetool Setup

To start the [Applications Wavetool](#) application, navigate to **Applications_Wavetool** from the **Start** menu and click the **Applications_Wavetool** icon (see Figure 3).

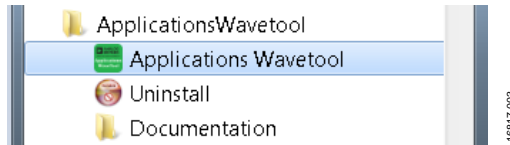


Figure 3. Navigate to **Applications_Wavetool** from **Start** Menu

At startup, the [Applications Wavetool](#) application automatically checks if the installed [Applications Wavetool](#) software version is up to date. If a newer software version is available, the user is prompted to download the newest version of the software.

EVALUATION BOARD USB CONNECTION

Prior to starting the [Applications Wavetool](#) application, connect either the [EVAL-ADPD2140Z](#) or [EVAL-ADPD1080Z-PRX](#) daughter board to the EVAL-ADPDM3Z evaluation board via the board-to-board connectors (see Figure 4). Connect the EVAL-ADPDM3Z evaluation board to a PC via the USB-C cable included with the evaluation kit. The PC tries to find the device drivers and install these drivers, if they have not been previously installed. This search is done automatically. When the EVAL-ADPDM3Z evaluation board is connected, open the [Applications Wavetool](#) application (see Figure 5).

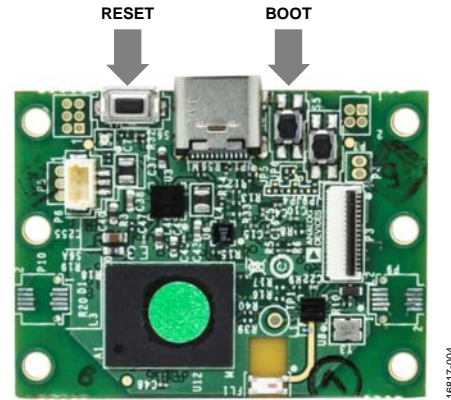


Figure 4. EVAL-ADPDM3Z Evaluation Board

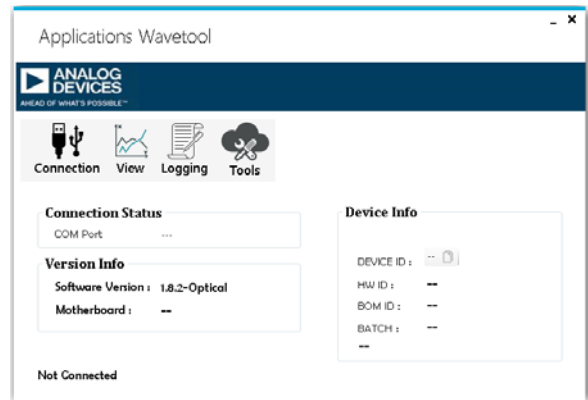


Figure 5. Applications Wavetool Window

After the [Applications Wavetool](#) application opens, click **Connection > Connect** to open the **COM Port Selection** window. Select the appropriate communication (COM) port from the **Connect** dropdown menu and click **Connect** (see Figure 6). The [Applications Wavetool](#) then acknowledges that the EVAL-ADPDM3Z evaluation board is connected by displaying **M3 Motherboard Found** on the screen.

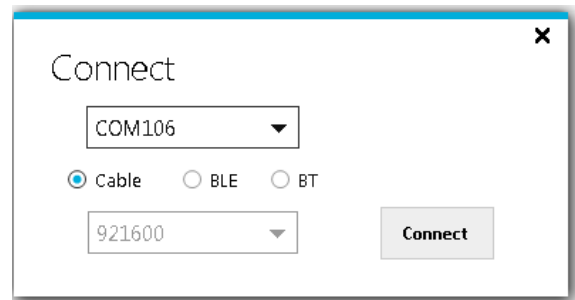


Figure 6. COM Port Selection Window

UPDATING THE EVAL-ADPDM3Z FIRMWARE

If the EVAL-ADPDM3Z firmware is out of date, the software displays a warning, as shown in Figure 7. If this occurs, click **Tools > Firmware Update** from the main window, and click **Ok** in the following pop-up window. Follow the instructions shown in Figure 7 to update the EVAL-ADPDM3Z firmware.



Figure 7. Updating the EVAL-ADPDM3Z Firmware

CONFIGURING THE EVAL-ADPD2140Z OR EVAL-ADPD1080Z-PRX EVALUATION BOARDS

To operate the EVAL-ADPD2140Z or EVAL-ADPD1080Z-PRX daughter boards, see the EVAL-ADPD2140Z or EVAL-ADPD1080Z-PRX user guides.

For more detailed information on the [Applications Wavetool](#) and additional features of the software, see the [Applications Wavetool User Manual](#), which can be found in the **Help > Help Topics** menu.

EVALUATION BOARD SCHEMATICS AND ARTWORK

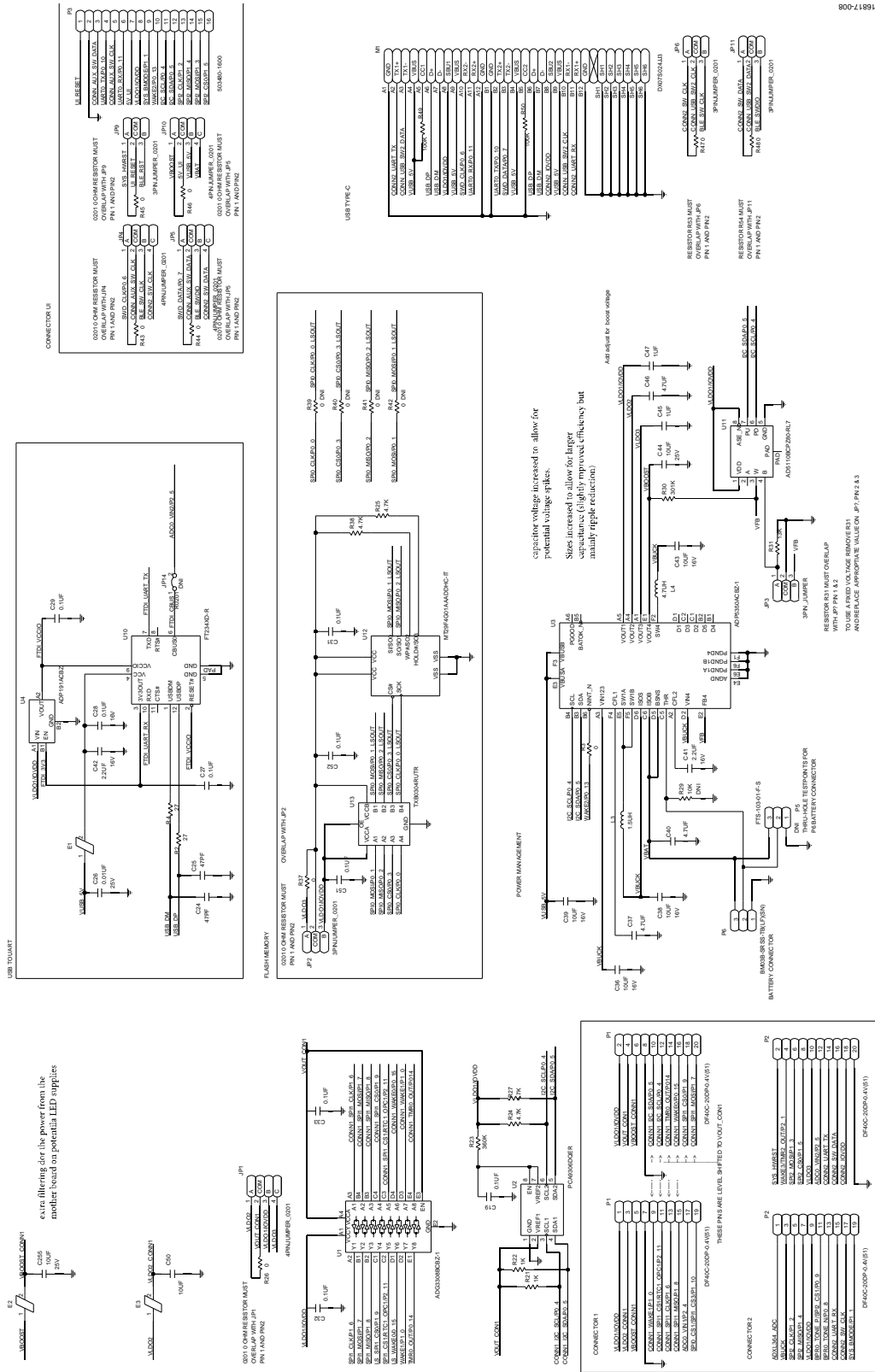


Figure 8. EVAL-ADPDM3Z Evaluation Board Schematic

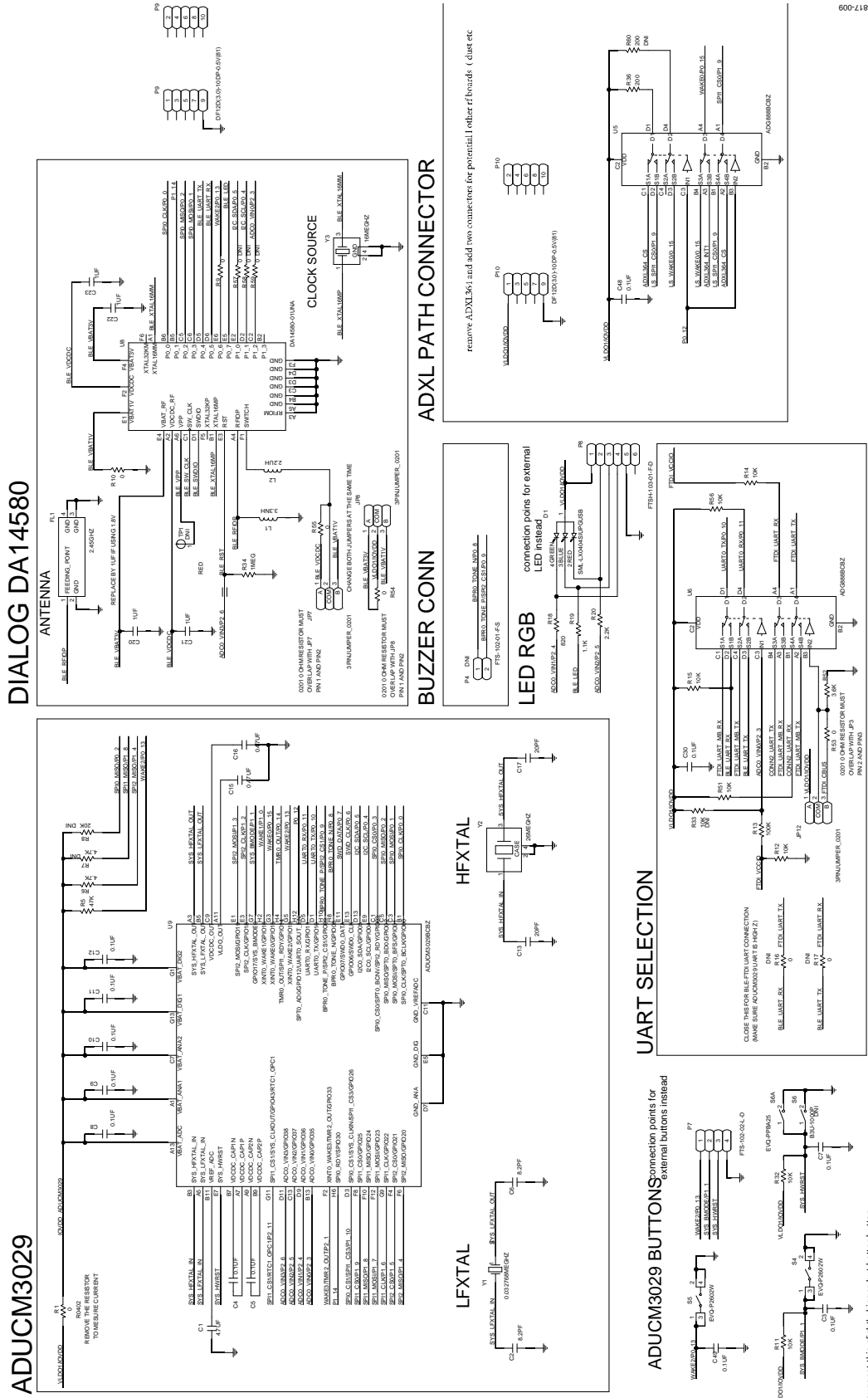


Figure 9. EVAL-ADPDM3Z Evaluation Board Schematic

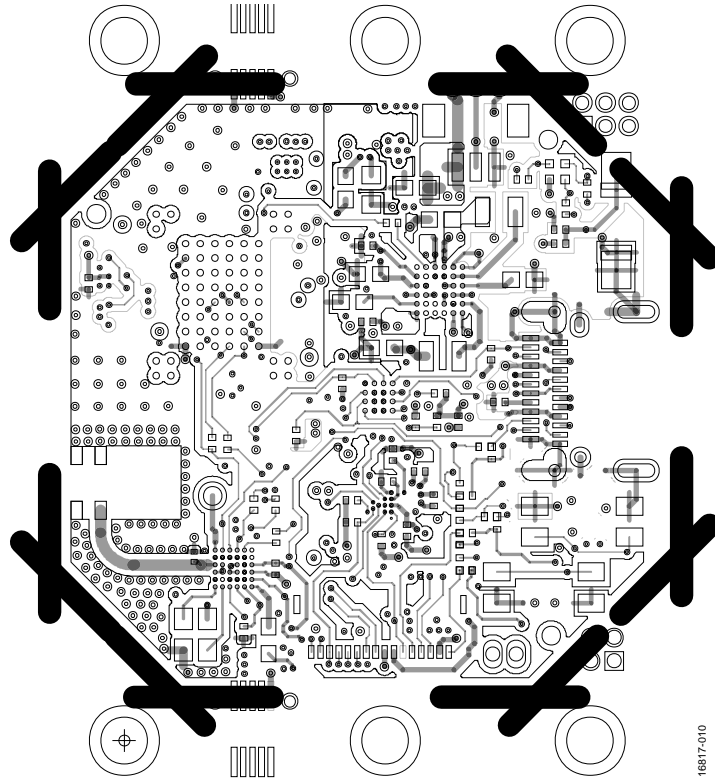


Figure 10. EVAL-ADPDM3Z Evaluation Board Layout

18817-010



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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