Description

The ZMID520x Evaluation Kit is designed for sensor module evaluation, laboratory setup, and module calibration development for the ZMID520x Family of Inductive Position Sensor ICs.

- ZMID5201: analog interface
- ZMID5202: PWM interface
- ZMID5203: SENT interface

The main purpose of the ZMID520x Evaluation Kit is communication between the user's computer and the ZMID520x. The computer sends commands and data via its USB port to the ZMID Communication Board.

The microcontroller on the Communication Board interprets these commands and relays them to the ZMID520x located on the ZMID520x Demo Board using the one-wire interface (OWI) communication interface.

The microcontroller also forwards data bytes from the ZMID520x back to the computer via the USB connection. These bytes can be sensor readings, raw analog-to-digital converter (ADC) data from analog outputs, or ZMID520x EEPROM contents.

The ZMID520x AID EVK Application Software is a graphical user interface (GUI) is provided online for the kit. It supports all ZMID520x configurations and enables the user to intuitively understand the functionality of the ZMID520x as well as performing measurements.

Features

- USB "plug and play" – no driver installation needed
- Small ZMID Communication Board: 5 cm × 8 cm
- One-wire communication interface (OWI) enables quick and easy configuration and calibration of the ZMID520x using the user's computer
- PWM, analog or SENT reading of the output depending on product
- The design allows easy swapping of ZMID520x Demo Boards
- Ability to connect and evaluate an external module board
  — No external power supply needed
  — External module is supplied from the ZMID520x Demo Board

Kit Contents

- ZMID520x Demo Board with printed sensor coil
- ZMID Communication Board
- Micro-USB cable
- Kit software is available for download from the IDT web site:
  www.IDT.com/ZMID5201-EVK
  www.idt.com/ZMID5202-EVK
  www.IDT.com/ZMID5203-EVK

ZMID520x Evaluation Kit
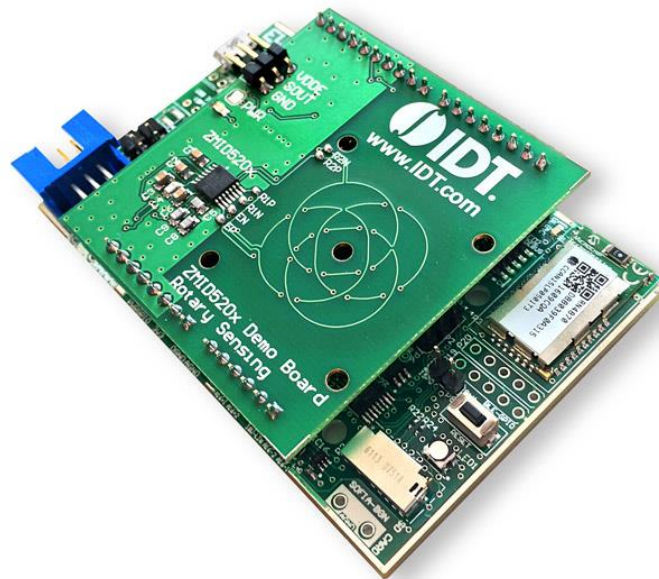
Important Notes

<u>Disclaimer</u>

Integrated Device Technology, Inc. and its affiliated companies (herein referred to as "IDT") shall not be liable for any damages arising out of defects resulting from

(i)   delivered hardware or software

(ii)   non-observance of instructions contained in this manual and in any other documentation provided to user, or

(iii)   misuse, abuse, use under abnormal conditions, or alteration by anyone other than IDT.

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<u>Restrictions in Use</u>

IDT's ZMID520x Evaluation Kit, consisting of the ZMID Communication Board, ZMID520x Demo Board, and micro-USB cable, and the ZMID520x AID EVK Application Software are designed for evaluation and configuration of the ZMID520x product family only. IDT's ZMID520x Evaluation Kit hardware and software must not be used for characterization measurements in terms of replacing calibrated laboratory environment and measurement devices.

⚠ **!**   **Important Equipment Warning:** Ensure the correct connection of all cables. Supplying the board using the wrong polarity could result in damage to the board and/or the equipment.

Contents

List of Figures

List of Tables

1. Setup

1.1 Required User Equipment

A Windows®-based computer is required for interfacing with the kit and configuring the ZMID520x.

1.2 User Computer Requirements and Setup

1.2.1 Computer Requirements

The user must have administrative rights on the computer to download and install the ZMID520x AID EVK Application Software for the kit.

The computer must meet the following requirements:

- Windows® XP SP3, Vista SP1 or later, 7 (including SP1), 8, 8.1, or 10
- Supported architecture: x86 and x64
- Available USB port
- Internet access for downloading the ZMID520x AID EVK Application Software

1.2.2 Software Installation and Setup

The ZMID520x AID EVK Application Software is not included with the kit. To ensure use of the latest version of the software, it is available for download free of cost in zip file format from the IDT web site on the web pages given on page 1.

Follow these procedures to install the ZMID520x AID EVK Application Software:

1. After downloading the zip file to the user's computer, extract the contents of the zip file.

2. Double-click on the extracted *setup.exe* file to activate the installation.

3. Follow the standard installation instructions displayed on the screen and change the installation path if required. If the default path settings have been used, the software automatically completes the installation and creates an access link on the user's computer under Start > All Programs > IDT > AID EVKIT. The installation dialog offers the option to create a desktop short-cut icon for the software.

1.3 Hardware Setup

This section describes the basic hardware setup of the ZMID5202 Evaluation Kit and provides a brief overview on the components.

1.3.1 Overview of the Hardware

Figure 1. ZMID520x Evaluation Kit

3-Pin External Module Connector (J5)

ZMID Communication Board

ZMID520x Demo Board
(Rotary Sensing)

Micro-USB Connector
(to User's Computer)

Reset Button

Status LED
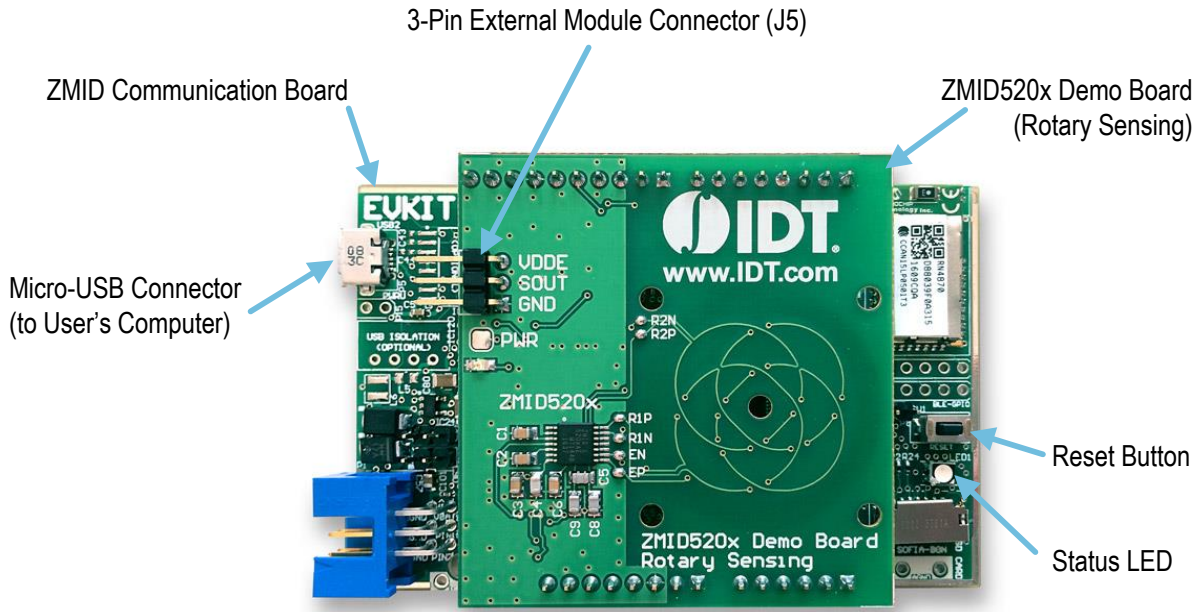
Figure 2. ZMID520x Rotary 360° Demo Board – Overview

Top View

Bottom View

J5 Connection to
External Module

PWR Test Point

PWR LED

An_Out Jumper
ANA Jumper
DIG Jumper
DIR Jumper

SOUT Jumper

PWR_VDDE Jumper

Table 1.   ZMID520x Demo Board (Rotary 360°) Key Components and Connector Descriptions

Note: See Figure 2 and section 3 for the locations of the jumpers referenced in this table.

Connector	Description
J1, J2, J3, J4	Header strips connected to the ZMID Communication Board
J5	3-pin male connector for connecting external modules
ZMID520x	The ZMID520x IC (ZMID5201, ZMID5202, or ZMID5203 depending on the kit order code).
PWR	Test pin for VDD
PWR LED	Status LED for the VDD
SOUT	Jumper JP1 for connecting an external module
PWR_VDDE	Jumper JP2 for connecting an external module
DIR	Jumper JP3 – interface network (see Table 2)
ANA	Jumper JP4 – interface network (see Table 2)
DIG	Jumper JP5 – interface network (see Table 2)
An_Out	Jumper JP6 – interface network (see Table 2)

1.3.2 Connecting the Kit

!	**Important Equipment Warning:** Ensure the correct connection of all cables. Supplying the board using the wrong polarity could result in damage to the board and/or the equipment.

1. Ensure that the ZMID Communication Board is not connected to the computer.

2. Align the pin headers of the ZMID520x Demo Board with the headers of the ZMID Communication Board as shown in Figure 1 and slowly apply force on both sides to connect the two boards.

3. Connect the ZMID Communication Board to the computer using the micro-USB cable provided in the kit. Power is provided from the computer via the USB connection. No external power source is required.

4. The status LED on the ZMID Communication Board will turn on. This indicates that the board is ready to communicate with the ZMID520x AID EVK Application Software. The PWR LED on the ZMID520x Demo Board (see Figure 2) also turns on when the board is powered up.

## 1.4 External Module Connection

!	**Important Equipment Warning:** Ensure the correct connection of all cables. Supplying the board using the wrong polarity could result in damage to the board and/or the equipment.

There is an option to evaluate an external module by connecting it to the ZMID520x Demo Board. An external module is usually similar to the ZMID520x Demo Board but designed for a customized application. Since external modules can be equipped with ZMID5201, ZMID5202, or ZMID5203, all the interfaces (analog, PWM, SENT) can be supported when connecting to the 3-pin connector on the ZMID520x Demo Board; however jumper settings on the ZMID520x Demo Board must be modified depending on the interface type of the connected external module. See section 1.4.1 for a description of the hardware settings.

Before connecting an external module to the Demo Board ensure that the VDDE, SOUT, and GND pin connections on J5 match the module connector. Figure 2 is showing an example of a rotary external module connected to the Demo Board.

Figure 3. Example ZMID520x External Module Connected to the Demo Board
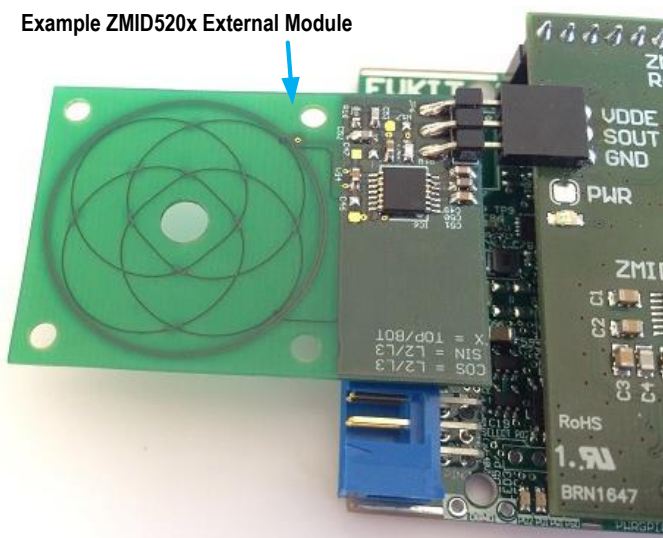
1.4.1 Jumper Settings for External Modules

To ensure that the correct interface network (located on the Demo Board) is used when reading the output signal of the ZMID520x, proper jumper settings are required on the bottom side of the Demo Board.

Whenever an external module is connected to the Demo Board, the jumpers SOUT and PWR_VDDE must be switched to the "Ext" setting as shown in Figure 4. Additional jumper settings depend on the interface type of the ZMID520x IC populated on the external module. The table below describes the jumper settings for the different type of products.

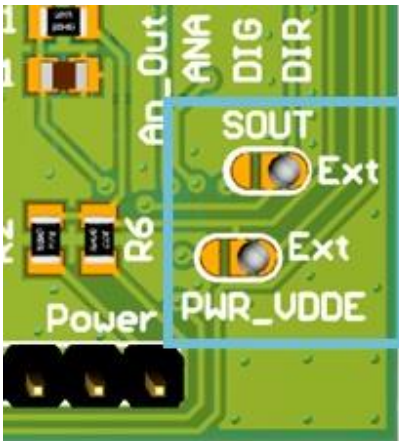**Figure 4.   SOUT and PWR_VDDE Jumper Settings for External Module**

**Table 2.   Jumper Settings for Connecting External Modules Depending on the Interface Type**

Connector	ZMID5201 Analog Interface	ZMID5202 PWM Interface	ZMID5203 SENT Interface
DIR (JP3)	Open	Closed	Closed
ANA (JP4)	Closed	Open	Open
DIG (JP5)	Open	Open	Open
An_Out (JP6)	Closed	Open	Open

2. ZMID520x AID EVK Application Software User Guide

2.1 Sections of the Display

The ZMID520x AID EVK Application Software provides a graphic user interface (GUI) for communicating with the kit. The GUI is displayed when the application is started. Figure 5 identifies the various sections of the display.

Figure 5. Sections of the GUI Display – Example ZMID5203
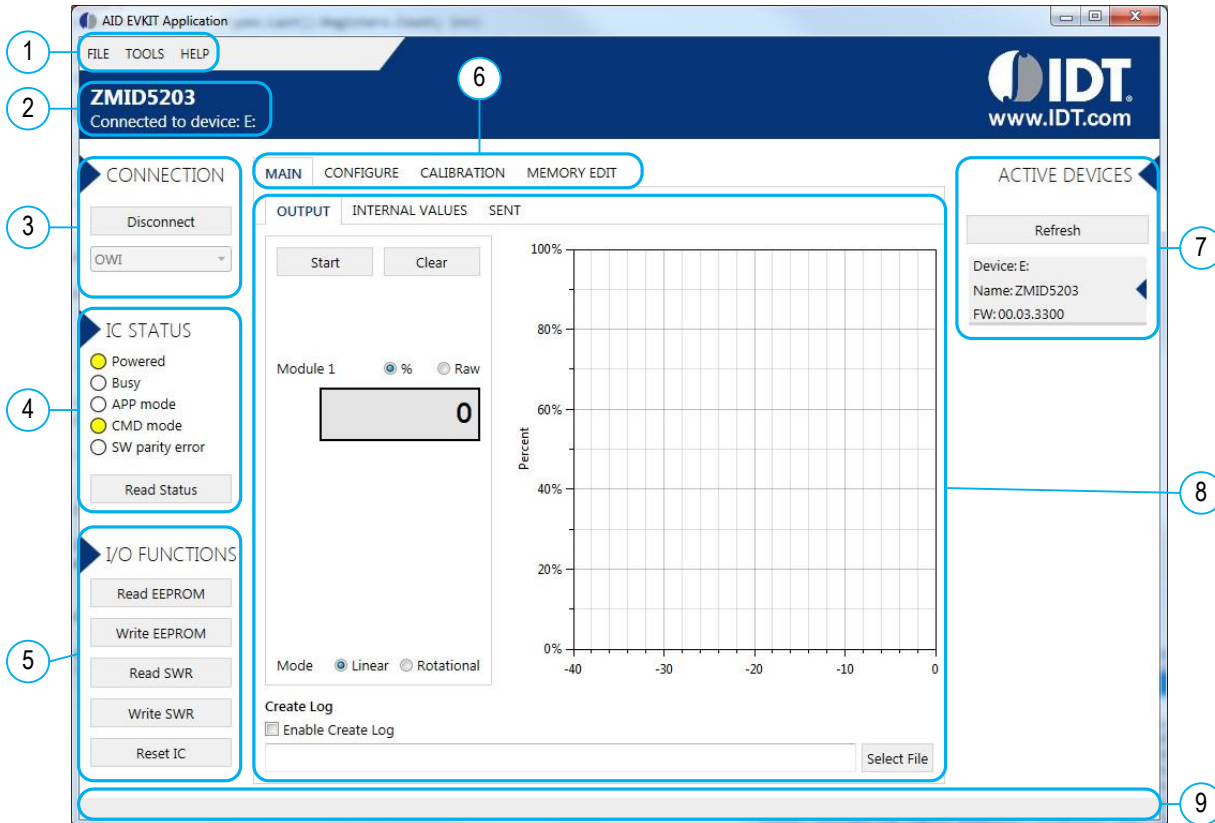
1. Menu bar: Contains settings and tools.

2. Information label: Displays the name of the connected device.

3. "CONNECTION" section: Displays connection related options.

4. "IC STATUS" section: Displays status information from the connected device.

5. "I/O FUNCTIONS" section: Displays options to perform READ and WRITE actions to the connected device.

6. Navigation tabs: Used to switch between the different main window tabs.

7. "ACTIVE DEVICES" section: Displays a list of the currently connected communication boards.

8. Main window area: Displays options and information about the connected device.

9. Status bar: Displays status messages during operation.

2.2   Getting Started

The following steps describe how to establish a connection to the ZMID520x Demo Board and perform measurements. The combination of a ZMID Communication Board and its connected ZMID520x Demo Board is referred to as the "device" in the GUI.

2.2.1   Connecting to a Device

1.   Ensure that the ZMID520x Demo Board is properly connected to the ZMID Communication Board. See section 1.3.2.

2.   Connect the ZMID Communication Board to the user's computer using the micro-USB cable provided in the kit.

3.   Start the GUI application.

4.   The device will show up in the active devices section. If there are no other devices on the list it will be automatically selected, otherwise select it by clicking on it.

5.   If the device shows as unknown or if an external module is connected to the Demo Board, manually identify the device first. For a description of how to manually identify a device, refer to section 2.6.

6.   Click on the "Connect" button to initialize the connection.

7.   After a successful connection, the GUI will display the contents of the main window area.
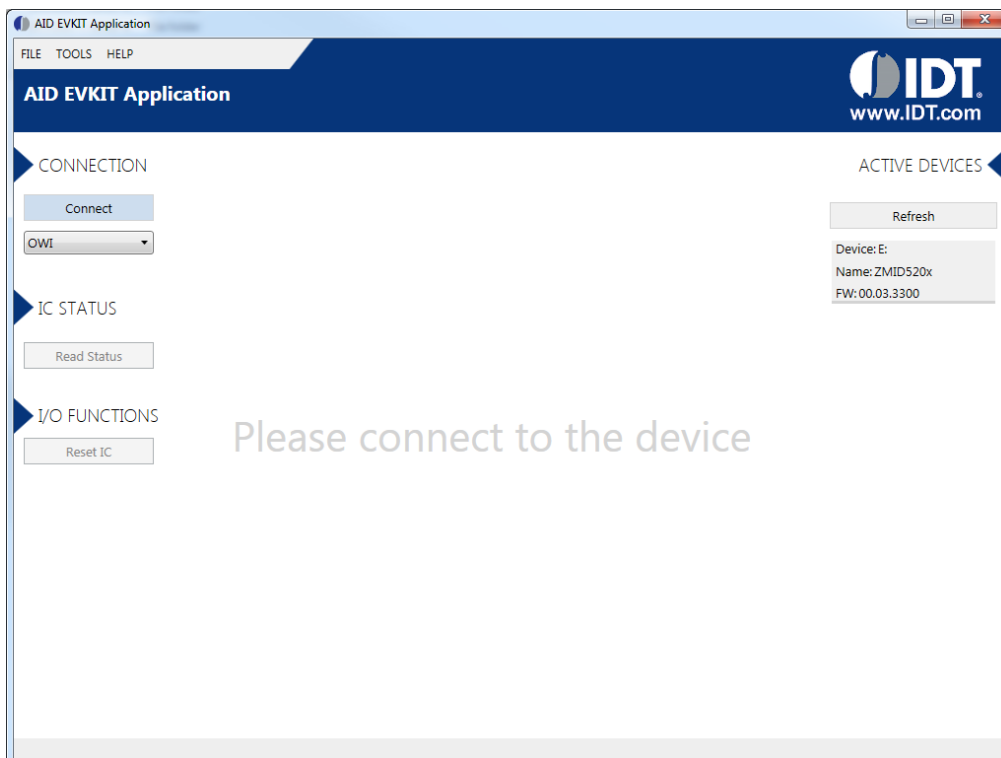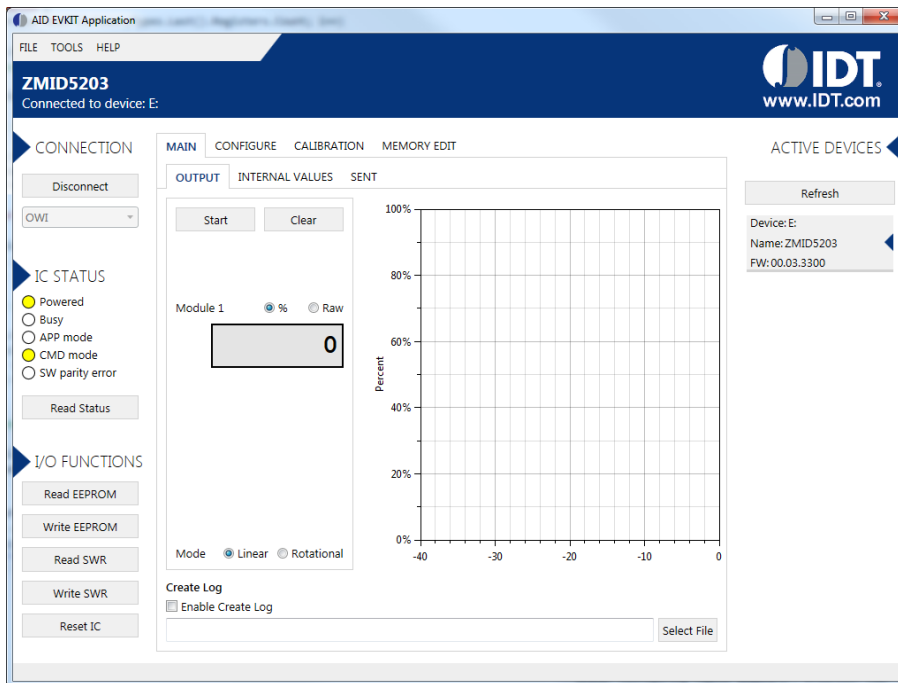
Figure 6.   Start-up Screen

Figure 7.   Display When Connected to a Device

2.2.2   Reading Measurements

1. After connecting to a device, select the "MAIN" tab from the navigation menu. Two sub-tabs "OUTPUT" and "INTERNAL VALUES" are displayed if the ZMID5201 or ZMID5202 is connected. For the ZMID5203, the "SENT" sub-tab is also displayed and provides a SENT interface decoder. The "Output" tab displays the reading at the ZMID520x output pin, SOUT.

2. The "OUTPUT" tab readings represent

    a.   Analog values for the ZMID5201

    b.   PWM values for the ZMID5202

    c.   SENT values for the ZMID5203

3. Select the desired type of graph and method of presenting the values, which can be displayed as raw (decimal/hexadecimal) values or as scaled values in percent.

4. Clicking the "Start" button will activate the measurements and change this button to the "Stop" button. The GUI disables some of its buttons and options while the measurement is active. Clicking the "Stop" button will deactivate the measurement and reactivate all options and buttons again.

5. At the bottom of each measurement tab the "Enable Create Log" box can be checked to log the measured values into a *.csv* file. The filename and its location are specified with the "Select File" entry field.

The "Output" tab displays the physical values by using either the ADC or digital inputs of the ZMID Communication Board. Figure 8 shows an example of SENT interface readings. For the PWM or analog interface, the values are captured using a 12-bit ADC located on the ZMID Communication Board. Hence, the accuracy of the measured values is limited due to the setup and the ZMID Evaluation Kit is not intended to act as a measurement device rather than a configuration tool.

Figure 8.   "OUTPUT" Tab
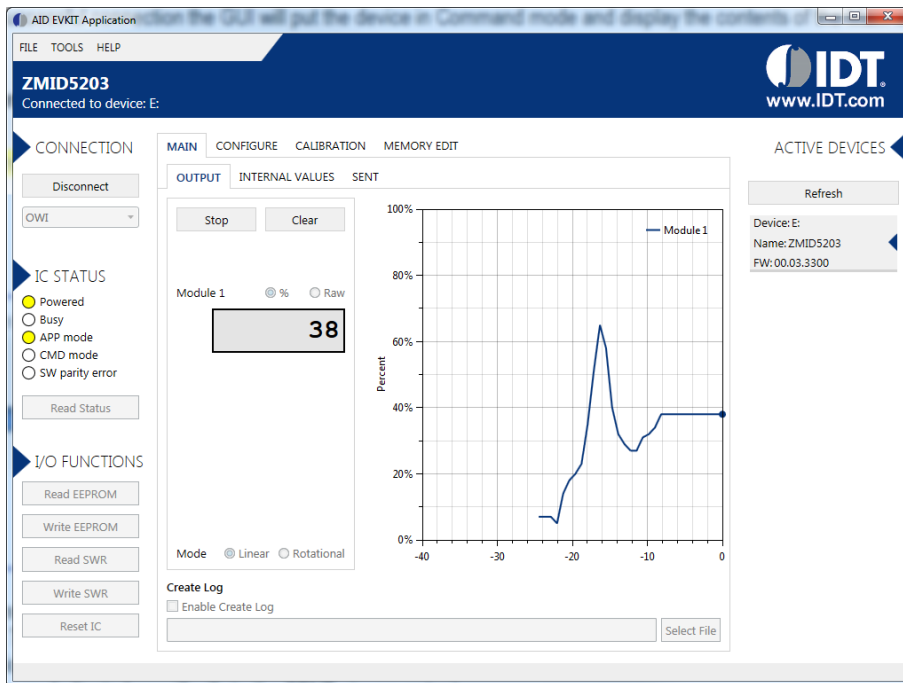
The "INTERNAL VALUES" tab displays measurements that are only accessible via OWI. Therefore all the readings are digital register contents and not limited in terms of hardware accuracy.

Figure 9.   "INTERNAL VALUES" Tab

The "SENT" tab is only available when the ZMID5203 Demo Board is connected to the ZMID Communication Board. It displays the decoded SENT data information.

Figure 10. SENT Tab
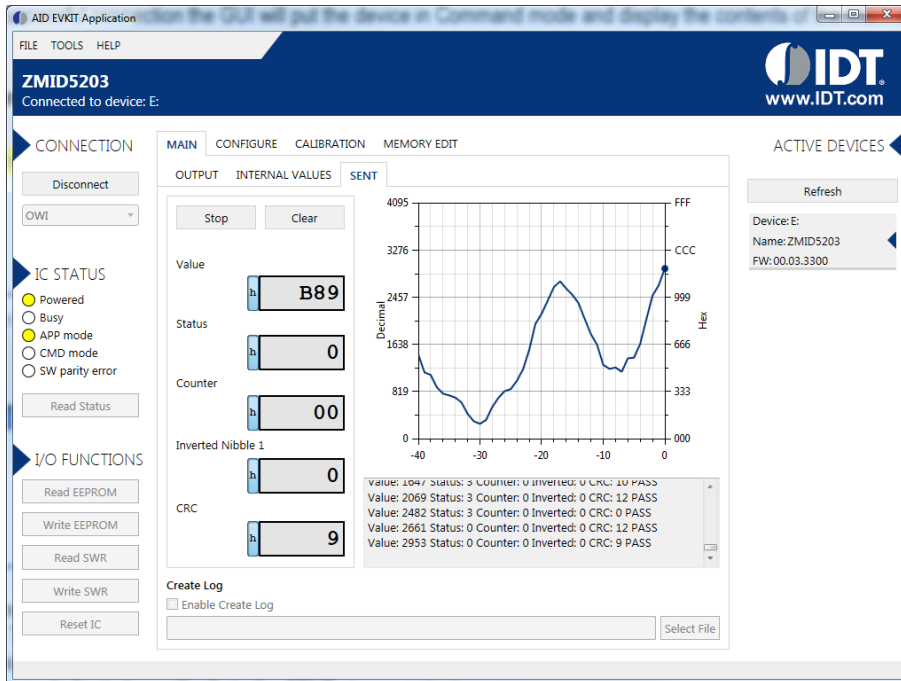
2.3   Changing the Configuration Settings

The "CONFIGURATION" tab is designed to provide the user with an easy way of viewing and editing the IC configuration. Each value represents a register or a part of a register from the internal memory of the device. The displayed memory type can be either the ZMID520x EEPROM or the SWR memory. SWR refers to shadow registers used as the working memory for the ZMID520x IC, which can be temporarily written via the GUI to the ZMID520x for development purposes.

Figure 11. Selection of Memory Type to be Displayed
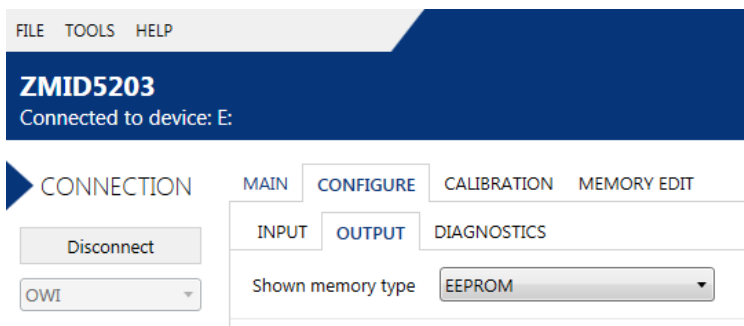
If parameters in the EEPROM memory selection have been changed, the IC must be reset after the writing process is finished for the changes to take effect. In the case of the SWR selection, changes in any parameters will take effect immediately. Note that the SWR changes will be lost after powering off the IC.

There are three different data types shown:

1. Numerical values are displayed in a white field (see Figure 12). If they are hexadecimal "0x" is automatically inserted at the beginning of the value.

2. Values with predefined multiple choices are displayed in a drop-down menu (see Figure 13).

3. Read-only values are displayed with a light blue background. They can only be selected and copied (see Figure 14).
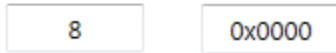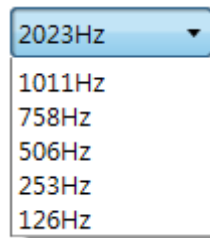
Figure 12. Types of Editable Numerical Values

| 8 | 0x0000 |

Figure 13. A Multiple Choice Value

2023Hz ▼
1011Hz
758Hz
506Hz
253Hz
126Hz

Figure 14. Types of Read-Only Values

| 3 | 0x0122 | Positive |

Changing a value will change the font color to red. This indicates that the change is not yet applied to the actual memory (EEPROM or SWR) of the IC. To apply the change, click the corresponding "Write…" button in the "I/O FUNCTIONS" section. If the "Reset IC" or one of the "Read…" buttons is pressed, the values will be set to represent the current settings of the device.

Figure 15. Modified Value that is Not Yet Saved to Memory

Off ▼
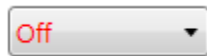
Context-sensitive pop-ups, referred to as "tooltips," provide additional information that appears briefly as the cursor hovers over an element on the screen. The tooltips for the value boxes include a brief description of the setting and the address of the internal memory register.

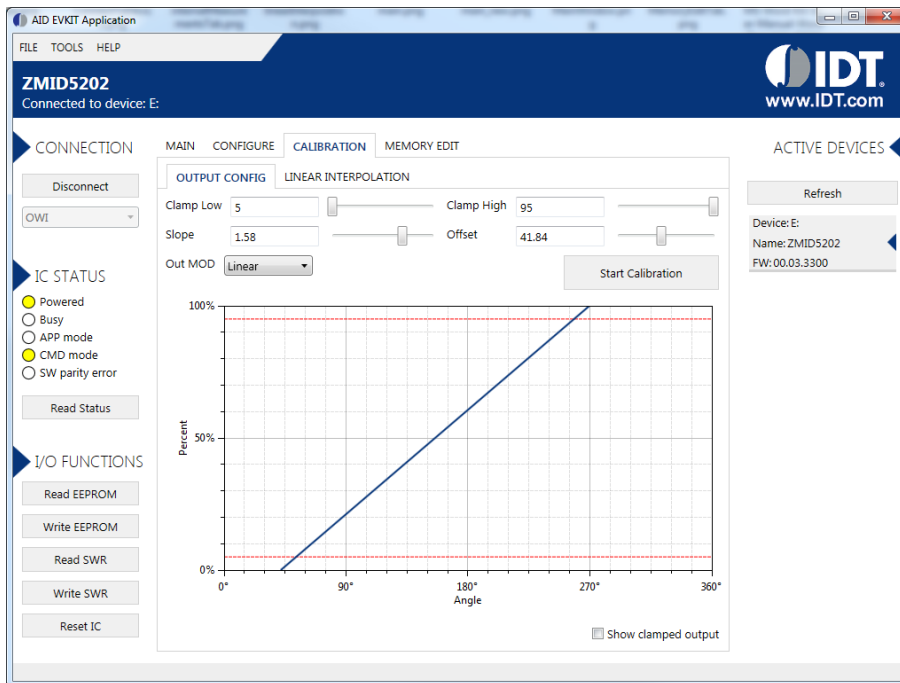**Figure 16. Example of Tooltip Information**

Pwm_freq   2023Hz ▼
          PWM frequency (Bits on address: 0x000A)
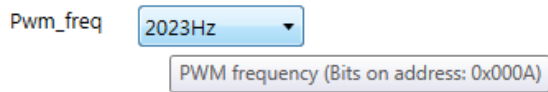
2.4   Calibration

2.4.1   Output Configuration Tab

The "OUTPUT CONFIG" sub-tab is located under the "CALIBRATION" tab in the navigation section. It is used to configure the output behavior of the ZMID520x.

Figure 17. "OUTPUT CONFIG" Tab – ZMID5202 Example

There are five values that can be edited that correspond to register values in the memory of the device:

1. Slope: Defines the slope of the output signal.

2. Offset: Defines the zero offset (start position) of the output signal referenced to the mechanical position.

3. Clamp Low: Defines the low clamp value of the output signal. It can be set to an integer value between 5% and 68%. Signal clamping is not applicable to the ZMID5203 (SENT Interface), so the option is not shown for this product.

4. Clamp High: Defines the high clamp value of the output signal. It can be set to an integer value between 32% and 95%. The GUI does not allow the Clamp High value to be set to a value lower than the Clamp Low value. Signal clamping is not applicable to the ZMID5203 (SENT Interface), so the option is not shown for this product.

5. Out MOD: Defines the output mode.

    ▪ Linear: The Linear Output Mode is a non-repeating output mode in which the sensor output signal is clamped at the mechanical end points (see Figure 18).

    ▪ Modulo: The Modulo Output (Sawtooth Output) Mode is a repeating output mode in which the sensor output signal is not clamped at the mechanical end points, but it is switched back to its origin (see Figure 19).

Figure 18. Linear Output Mode Example with Slope = 2, Offset = 90°
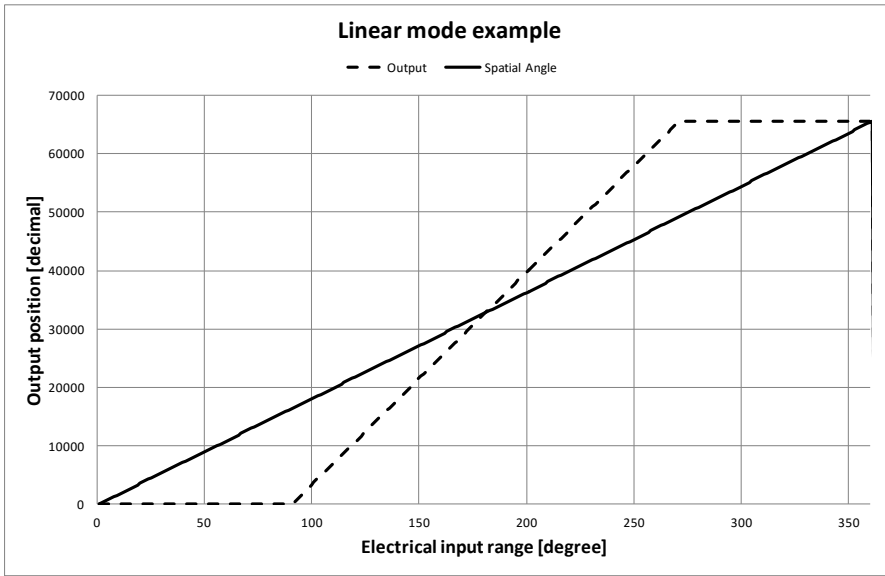
Figure 19. Modulus Output Example with Slope = 2, Offset = 60°
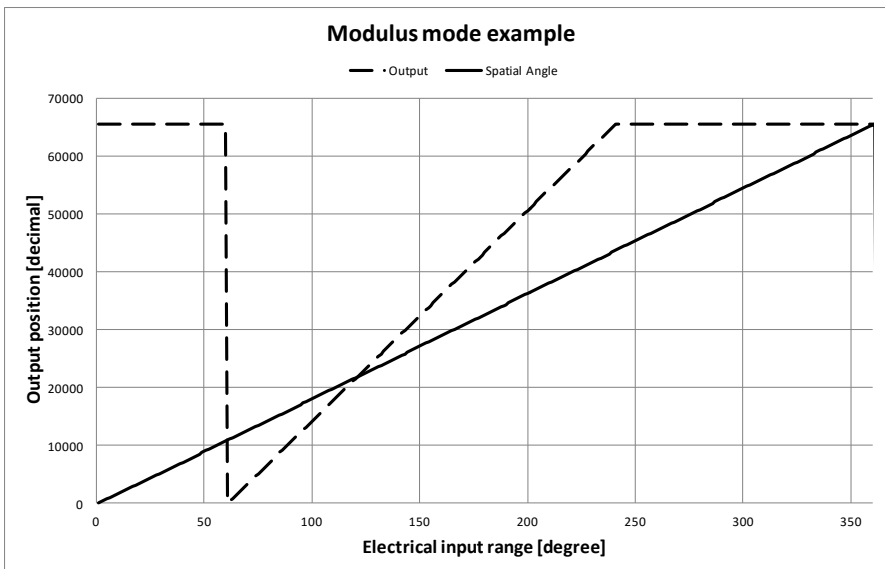
For a detailed description of output settings, refer to the *ZMID520x Datasheet*.

2.4.2 Automatic Output Calibration Procedure

To start the automatic calibration, click the "Start Calibration" button. The GUI will guide the user through a sequence of instructions for performing the calibration procedure.

1. Move the sensing target to the start position, and click OK in the dialog box. The graph will start displaying the internal reading of the position.

2. Move the sensing target toward the end position, and click OK. This step is used to determine the original slope of the position values. The GUI will automatically attempt to determine if the slope is positive (values ascending) or negative (values descending). If this cannot be determined, the GUI will ask the user to specify the polarity of the slope. For the example provided in Figure 20, the slope is negative.

3. Set the target at the end position, and click OK. The GUI will attempt to calculate the values for the offset and slope. The calculated values will be placed in their corresponding text boxes, and the user will be informed with a message to use the corresponding "Write…" buttons in the "I/O FUNCTIONS" section to write the new coefficients to the memory of the device. See Figure 21.

4. If the calculated values are out of range, a message will inform the user which value is affected. The most common cause of unsuccessful calibration is setting the start and end target position too close to each other since this could require a slope value bigger than the valid range of slope values. See Figure 22.

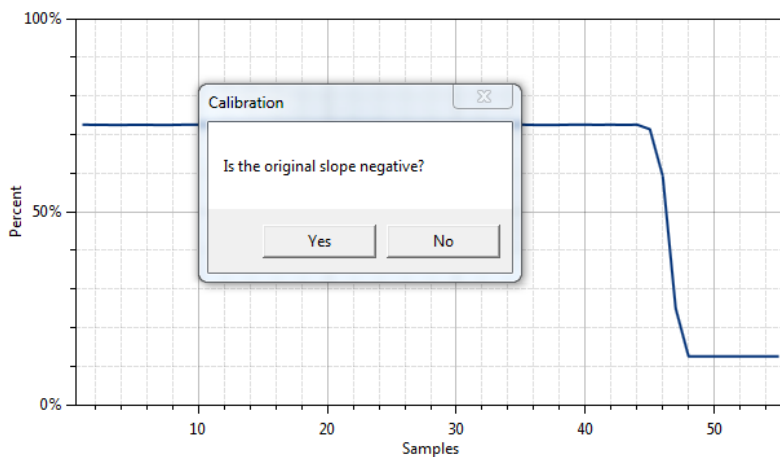**Figure 20. Specify the Original Slope**
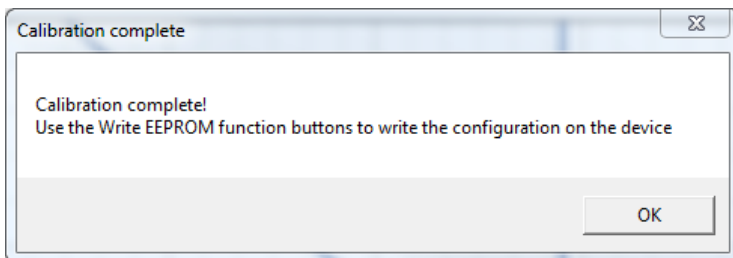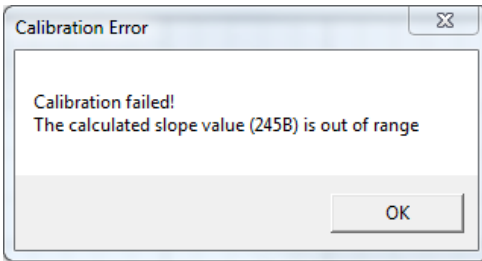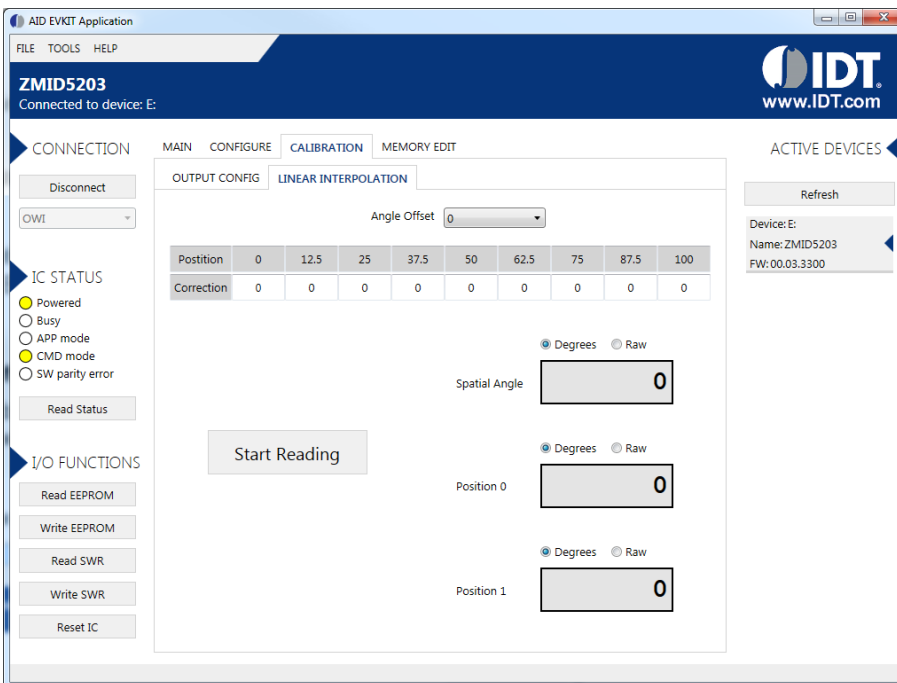

Figure 21. Successful Calibration Message

**Figure 22. Unsuccessful Calibration Message**

2.4.3 "LINEAR INTERPOLATION" Tab

Figure 23. "LINEAR INTERPOLATION" Tab – ZMID5203 Example

There are nine points at which a value can be specified to apply a correction curve over the position range. The "Angle Offset" drop-down menu can be set to either 0° or a 22.5° offset that helps to shift the linearization points if required. Whether the offset is applied or not is determined by the non-linearity error distribution. (Refer to the *ZMID520x Datasheet* for details) The values for the correction can be set as integers in the range of -127 to 127.

The "Start Reading" button triggers a continuous reading of the three internal position registers of the ZMID520x (see Figure 24 for the corresponding measurement points in the calibration process). This is implemented to help the user measure the linearization error at the specific points. The "Spatial Angle" reading represents the CORDIC output angle before applying the slope and offset calibration. The "Position 0" reading is the position value after applying the slope and offset calibration but before applying the linear interpolation. The "Position 1" reading is the final value after the linear interpolation is applied.

To save changes to the device, use the corresponding "Write…" button in the "I/O FUNCTIONS" section.

Figure 24. Calibration Diagram
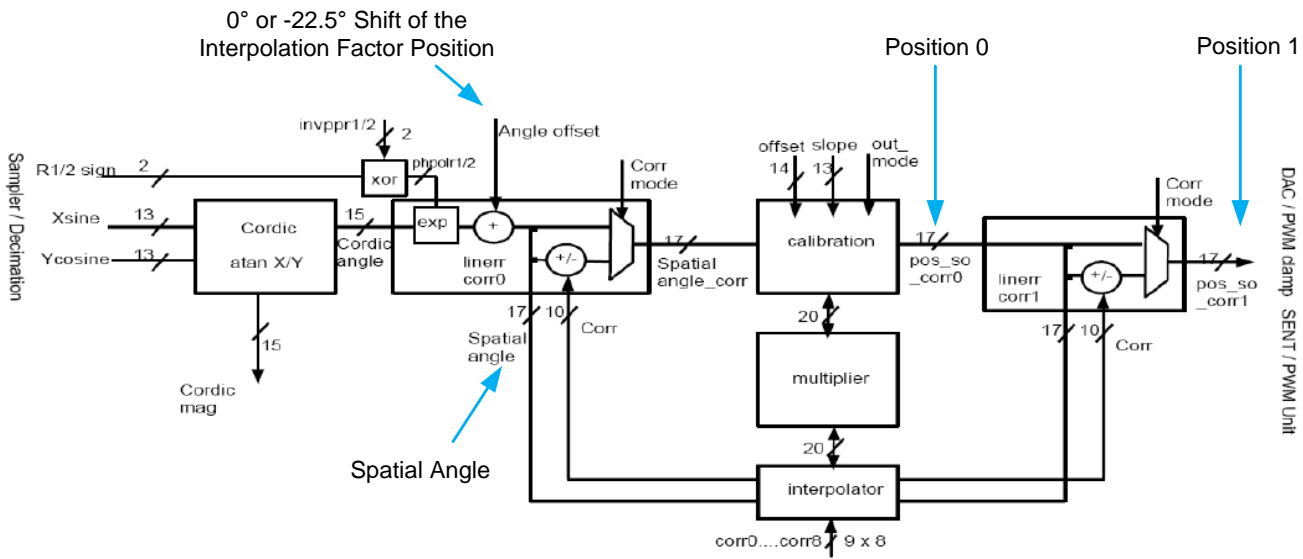
2.5 Working with the Memory

2.5.1 "MEMORY EDIT" Tab

Information for all the memory types of the device and their values can be found on the "MEMORY EDIT" tab. The data is organized in tables, and the register values are in hexadecimal format.

Figure 25. "MEMORY EDIT" Tab Contents

The read-only registers are marked with a light blue background. Modified register values will appear in red color until they are written to the device memory or re-read from it.

Figure 26. Example of a Modified Value on the "MEMORY EDIT" Tab

Placing the cursor over a table cell displays a tooltip with additional information about the register.

**Figure 27. Example of "MEMORY EDIT" Tab Tooltip Information**

2.5.2 Saving and Loading Memory Dump Files

The current memory configuration can be saved to a file via "FILE" menu > "Save Memory Dump." This is useful for providing a backup of the verified memory configuration or for copying a configuration to another device.

The "Load Memory Dump" option loads a selected memory dump file into the "MEMORY EDIT" tab. The "Write EEPROM" button in the "I/O FUNCTIONS" section must be used to write the configuration into the memory of the IC.

The GUI provides a set of default memory dump files that can be used to easily return a device to its original settings.

The default memory dump files can be found in the *MemoryDumps* folder located in the main installation directory of the GUI.

**Figure 28. Menu Options for Saving and Loading Memory Dump Files**
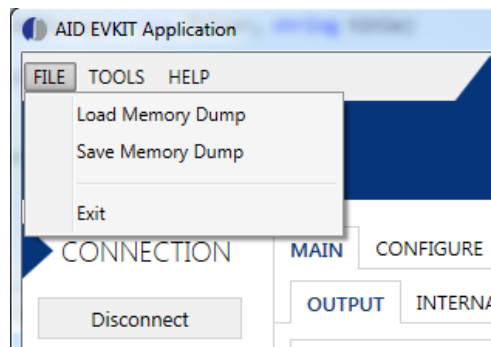
2.6   Manually Identifying a Device

The GUI automatically recognizes the connected device by reading identification information that is stored in an EEPROM on the ZMID520x Demo Board. If the GUI is unable to identify the device, the user must manually identify it. There is also a menu option to re-identify a device.

2.6.1   Identifying an Unknown Device

If the GUI is unable to automatically identify the device, it will be displayed as an unknown device in the "ACTIVE DEVICES" section, and the "Connect" button will be replaced by an "Identify Device" button

**Figure 29. GUI View when an Unknown Device is Selected**
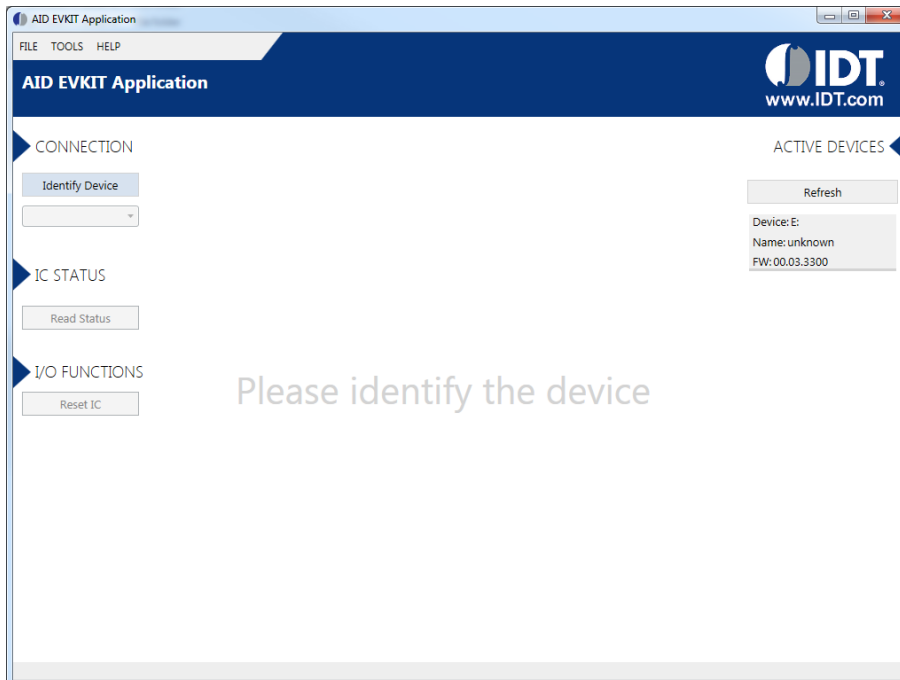
Follow these steps to identify an unknown device:

1.   Select the device by clicking on it in the "ACTIVE DEVICES" section.

2.   Click on the "Identify Device" button in the "CONNECTION" section.

3.   Select the proper identification file based on the type of ZMID520x Demo Board, and click Open. The identification files can be found on the root in the *Profiles* folder. See Figure 30.

4.   The GUI will identify the device and automatically connect to it.

Figure 30. File Dialog to Select an Identification File
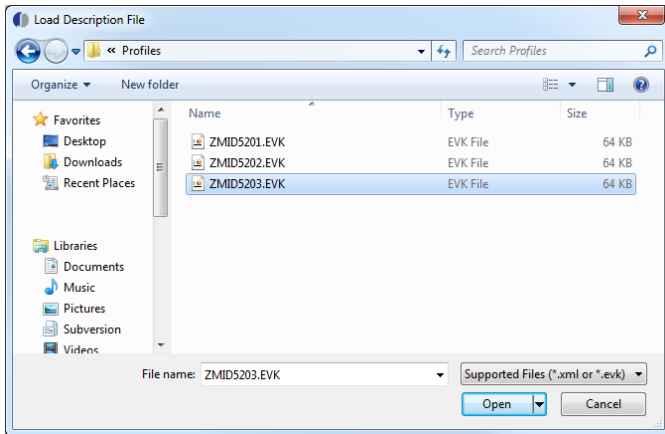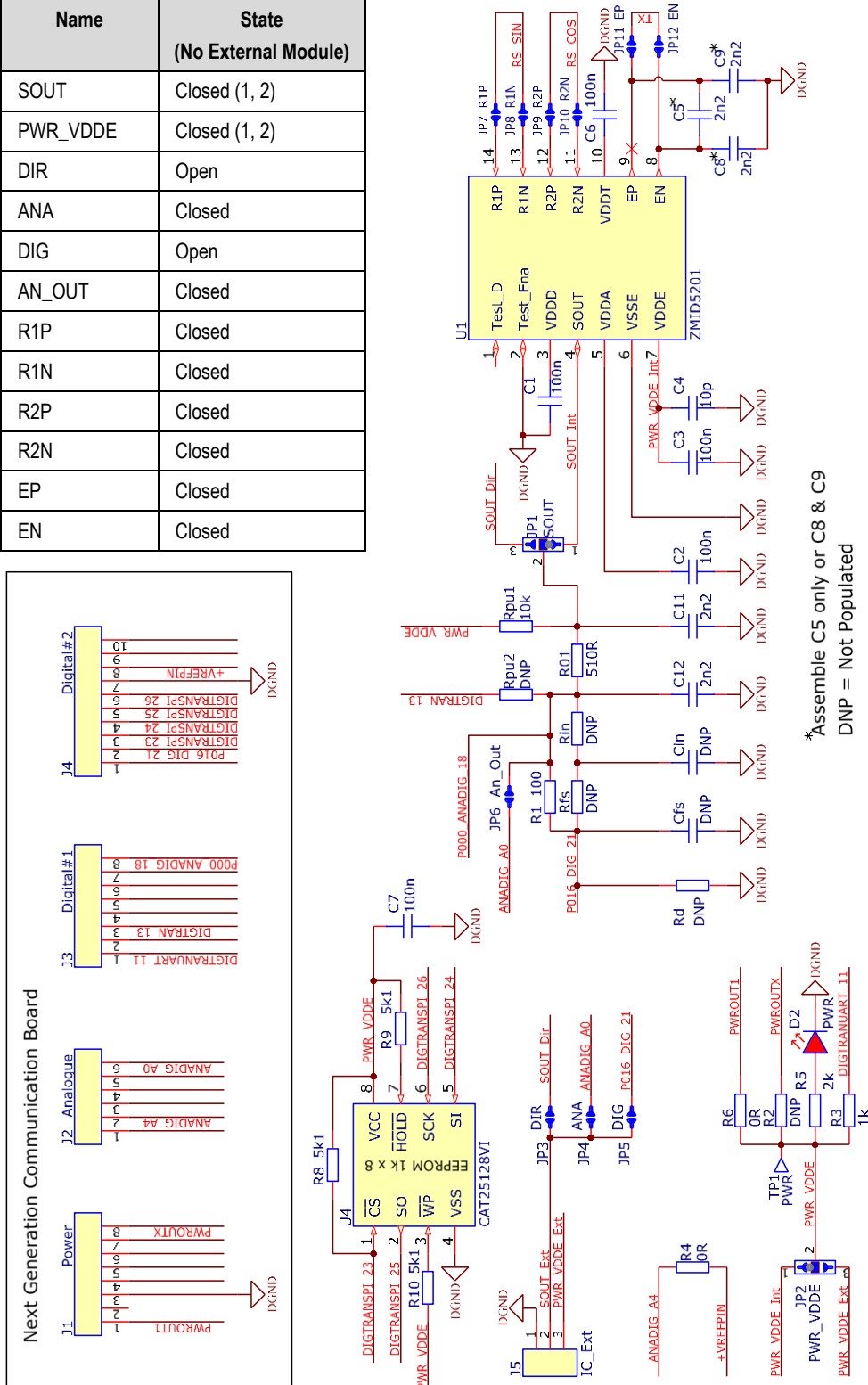

2.6.2 Re-identifying a Device

1. Ensure the GUI is not already connected to any device.

2. Select the device to identify from the "ACTIVE DEVICES" list by clicking on it.

3. Open the "TOOLS" menu, and select the "Identify Selected Device" menu option.

4. Select the proper identification file based on the type of ZMID520x Demo Board, and click "Open."

5. The GUI will re-identify the device with the selected identification file and update the device information in the "ACTIVE DEVICES" section.

Figure 31. "Identify Selected Device" Menu Option
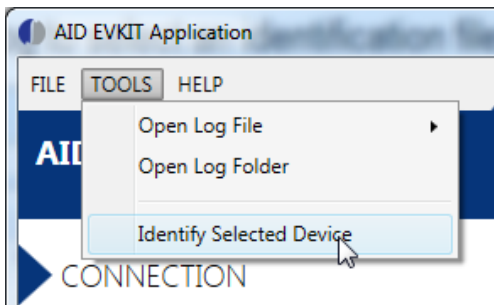
3. Schematics

Figure 32. ZMID5201 Demo Board Schematic

Jumper	Name	State (No External Module)
JP1	SOUT	Closed (1, 2)
JP2	PWR_VDDE	Closed (1, 2)
JP3	DIR	Open
JP4	ANA	Closed
JP5	DIG	Open
JP6	AN_OUT	Closed
JP6	R1P	Closed
JP8	R1N	Closed
JP9	R2P	Closed
JP10	R2N	Closed
JP11	EP	Closed
JP12	EN	Closed

Figure 33. ZMID5202 Demo Board Schematic

Jumper	Name	State (No External Module)
JP1	SOUT	Closed (1, 2)
JP2	PWR_VDDE	Closed (1, 2)
JP3	DIR	Open
JP4	ANA	Open
JP5	DIG	Open
JP6	AN_OUT	Open
JP6	R1P	Closed
JP8	R1N	Closed
JP9	R2P	Closed
JP10	R2N	Closed
JP11	EP	Closed
JP12	EN	Closed

Figure 34. ZMID5203 Demo Board Schematic

Jumper	Name	State (No External Module)
JP1	SOUT	Closed (1, 2)
JP2	PWR_VDDE	Closed (1, 2)
JP3	DIR	Open
JP4	ANA	Open
JP5	DIG	Open
JP6	AN_OUT	Open
JP6	R1P	Closed
JP8	R1N	Closed
JP9	R2P	Closed
JP10	R2N	Closed
JP11	EP	Closed
JP12	EN	Closed

4. Bill of Materials (BOM)

Table 3.   ZMID520x Rotary 360˚ Demo Board BOM

Designator	Value	Package	Manufacturer P/N	Manufacturer	Quantity
C1, C2, C3, C6, C7	Cap 100nF 100V X7R	0805	CL21B104KCFSFNG	Samsung	5
C4	Cap 10pF 50V COG	0805	CL21C100DBNC	Samsung	1
C5, C8, C9, C11, C12, Cin	Cap 2.2nF 100V COG	0805	CGA4F2COG2A222J 085AA	TDK	6
D2	LED 0805 Red	0805	KPT-2012SURCK	Kingbright	1
J1, J2, J3, J4	Header Male 1x8, Header Male 1x6, Header Male 1x8, Header Male 1x10	Row 2.54mm	CH31402V200	CVILUX	4
J5	Header Male 1x3 RA	TH P2.54mm	CH31402H200	CVILUX	1
R1	Res 100R 1%	0805	0805S8F0101T50	UNI OHM	1
R01	Res 120R 1%	0805	0805S8F0121T50	UNI OHM	1
R2, R4, R6	Res 0R 5%	0805	0805S8J000T50	UNI OHM	3
R3	Res 1.0k 1%	0805	0805S8F0102T50	UNI OHM	1
R5	Res 2.0k 1%	0805	0805S8F0202T50	UNI OHM	1
R8, R9, R10	Res 5.1k 1%	0805	0805S8F0512T50	UNI OHM	3
Rin	Res 560R 1%	0805	0805S8F0561T50	UNI OHM	1
Rpu1, Rpu2	Res 51k 1%	0805	0805S8F0513T50	UNI OHM	2
U1	Position Sensor	TSSOP-14	ZMID5201/-02/-03	IDT	1
U4	SPI EE Memory	SOIC-8	CAT25080VI-GT3	Digi-Key	1

5. Demo Board Layout

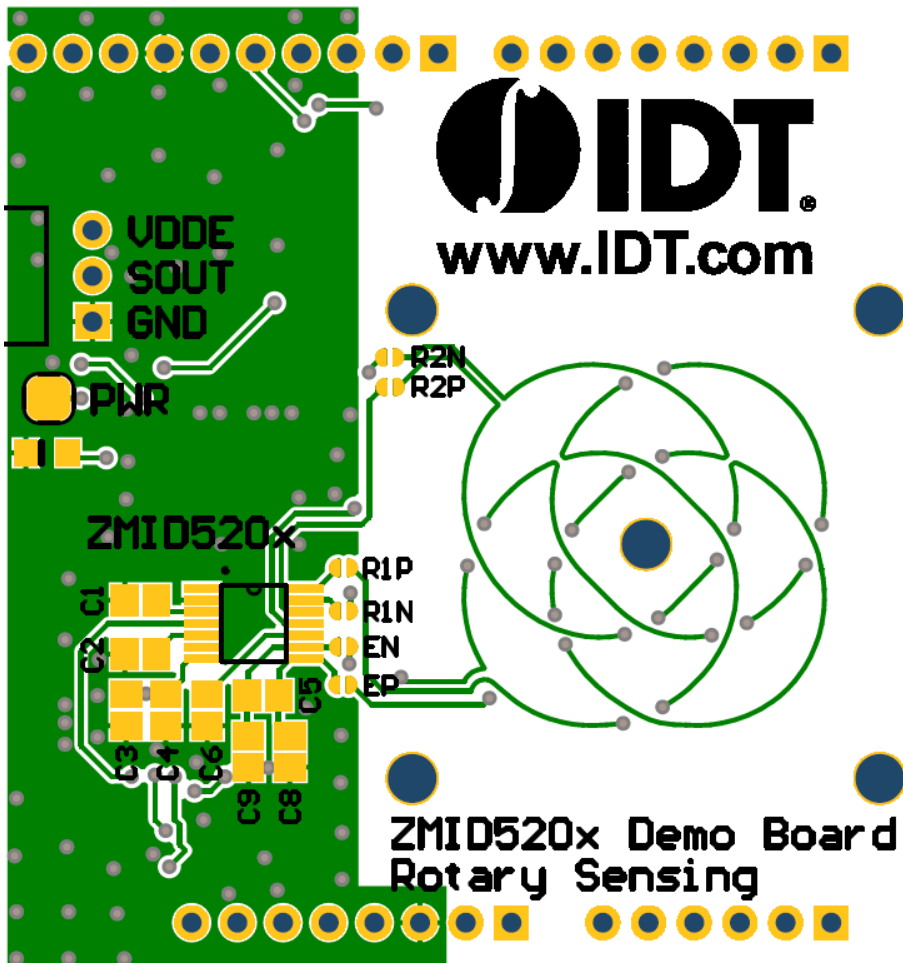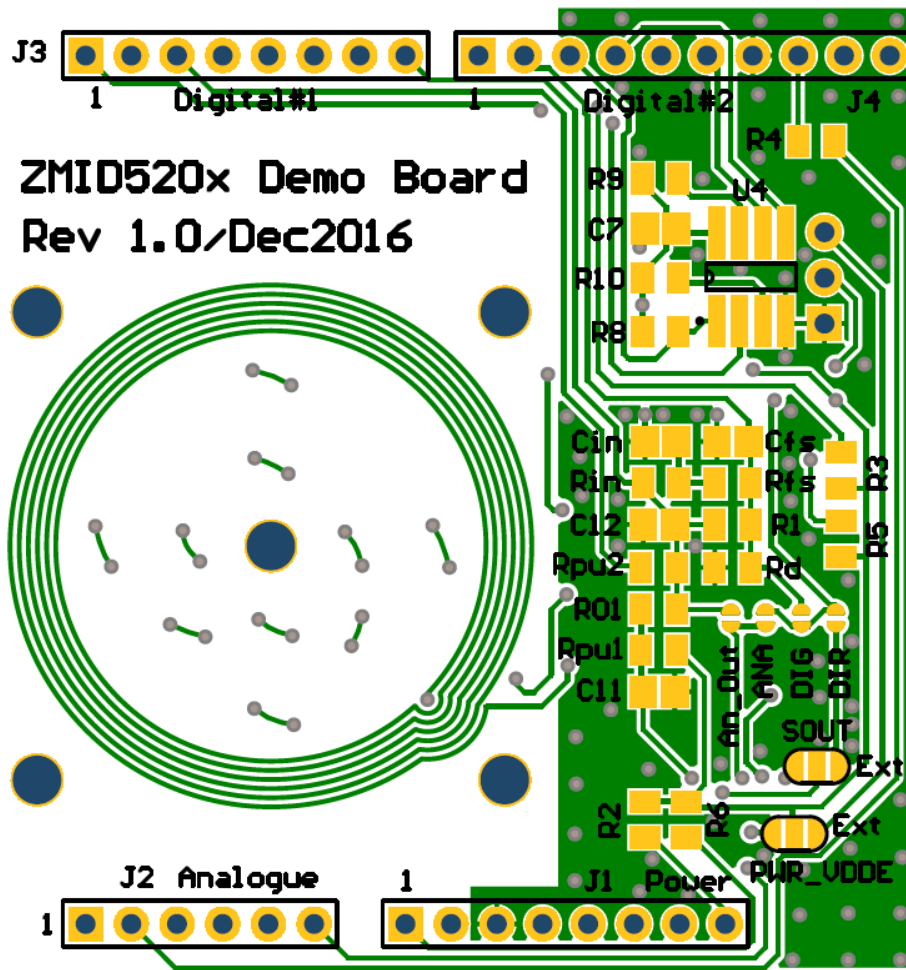**Figure 35. ZMID520x Rotary 360° Demo Board Layout – Top Layer**

Figure 36. ZMID520x Rotary 360° Demo Board Layout – Bottom Layer

6. Glossary

Term	Definition
ADC	Analog-to-Digital Converter
CSV	Comma Separated Values – A file format that can be imported in spreadsheets.
EEPROM	Electrically Erasable Programmable Read-Only Memory – The storage memory of the ZMID520x IC.
GUI	Graphical User Interface – Refers to the application used for communication with the kit.
HW	Hardware
OWI	One-Wire Interface
PWM	Pulse Width Modulation
SENT	Single Edge Nibble Transmission
SW	Software
SWR	Shadow Register – Used as working memory for the ZMID520x IC.
USB	Universal Serial Bus

7. Ordering Information

Orderable Part Number	Description
ZMID5201-EVK	ZMID5201 Evaluation Kit: ZMID Communication Board, ZMID5201 Demo Board with printed sensor coil, micro-USB cable
ZMID5202-EVK	ZMID5202 Evaluation Kit: ZMID Communication Board, ZMID5202 Demo Board with printed sensor coil, micro-USB cable
ZMID5203-EVK	ZMID5203 Evaluation Kit: ZMID Communication Board, ZMID5203 Demo Board with printed sensor coil, micro-USB cable

8. Revision History

Revision Date	Description of Change
March 27, 2017	Initial release

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