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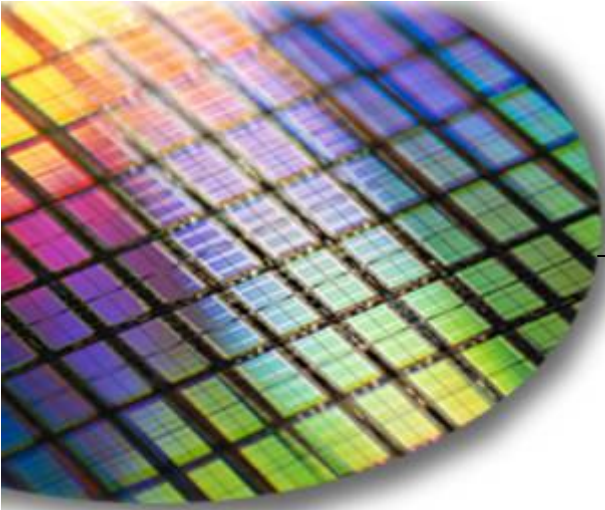
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The World Leader in High Performance Signal Processing Solutions



# *iSensor*<sup>®</sup>

## ADIS16135 Evaluation Tool Overview



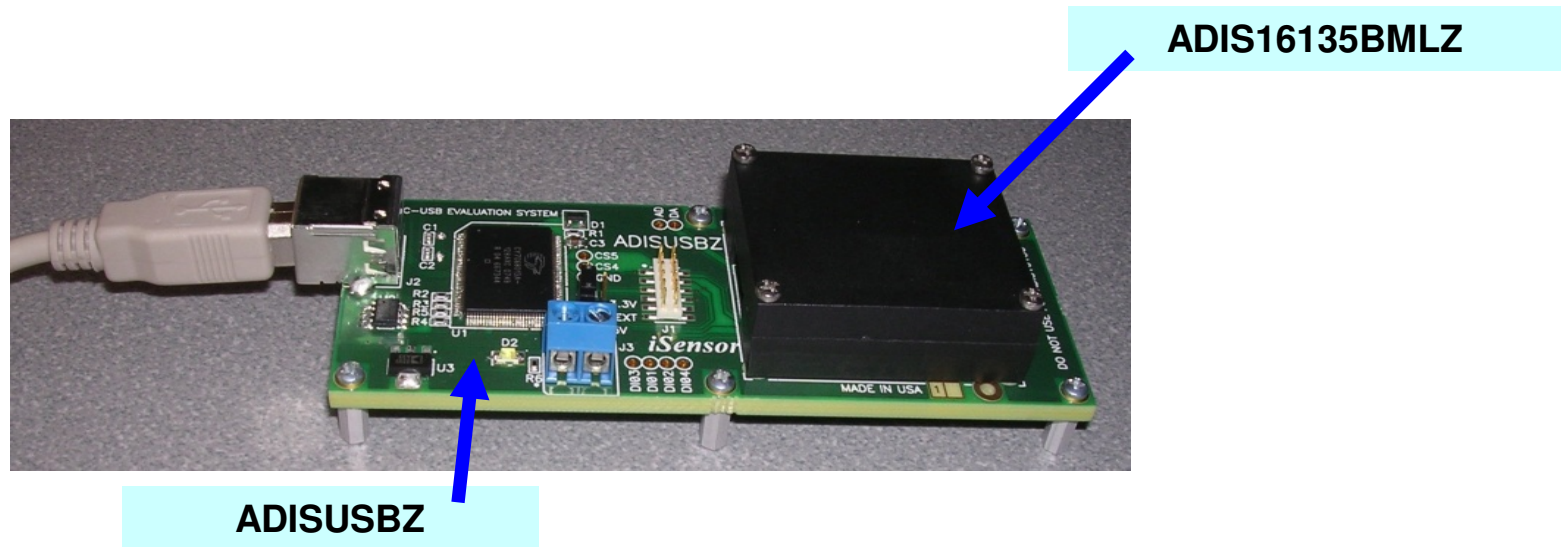
Mark Looney  
*iSensor*<sup>®</sup> Application Engineer  
July 2011



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## PC-Based Evaluation

- ◆ The ADISUSBZ provides PC-based demonstration and basic evaluation support for the ADIS16135BMLZ.
- ◆ This system provides a simple USB interface, along with a simple graphical user interface (GUI) package, for evaluating most of the ADIS16135 functions and performance.
- ◆ This system is most useful for basic data collection and performance validation.
- ◆ This is not a real-time development system. No SDK available.
- ◆ Part number for ordering: (1) ADIS16135BMLZ, (1) ADISUSBZ

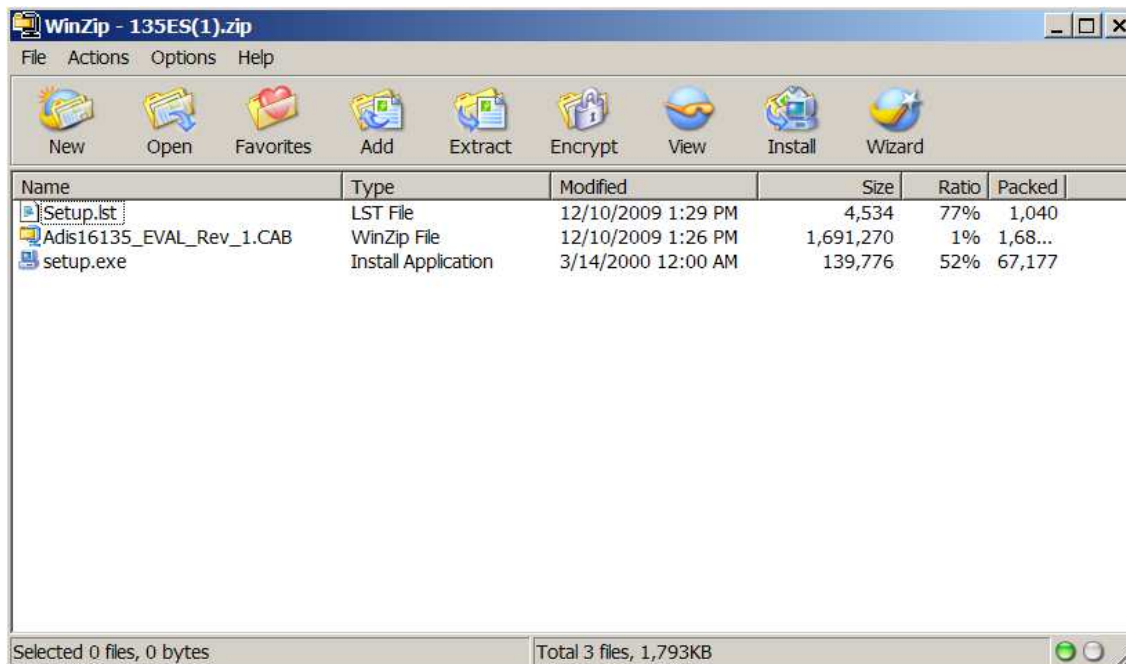


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## ADIS16135 Demonstration Software Installation

The ADIS16135 demonstration software can be found at [www.analog.com/ADIS16135](http://www.analog.com/ADIS16135)

1. Click on “Evaluation Software Downloads”
2. Click on 135ES.zip and save it to a temporary directory
3. Open it and double click on setup.exe.

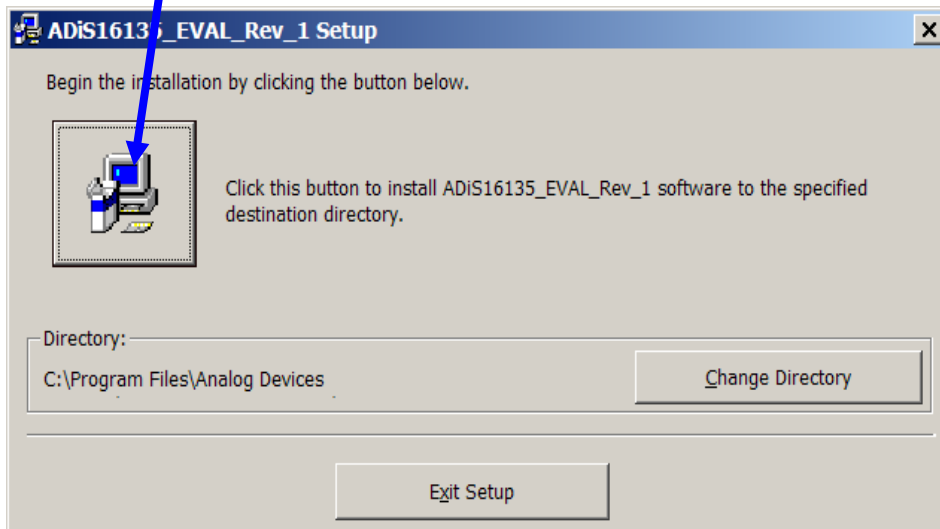
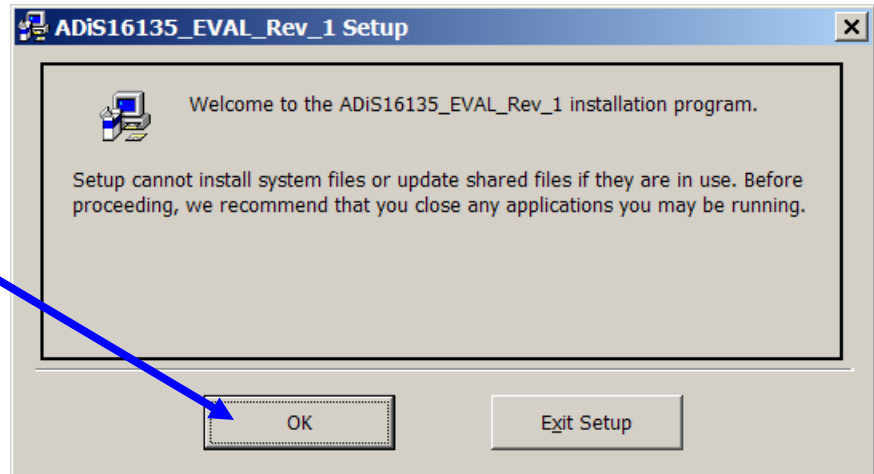


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## ADIS16135 Demonstration Software Installation

### Installation Steps (continued)

4. Click **OK** on next screen
5. Click here to start installation



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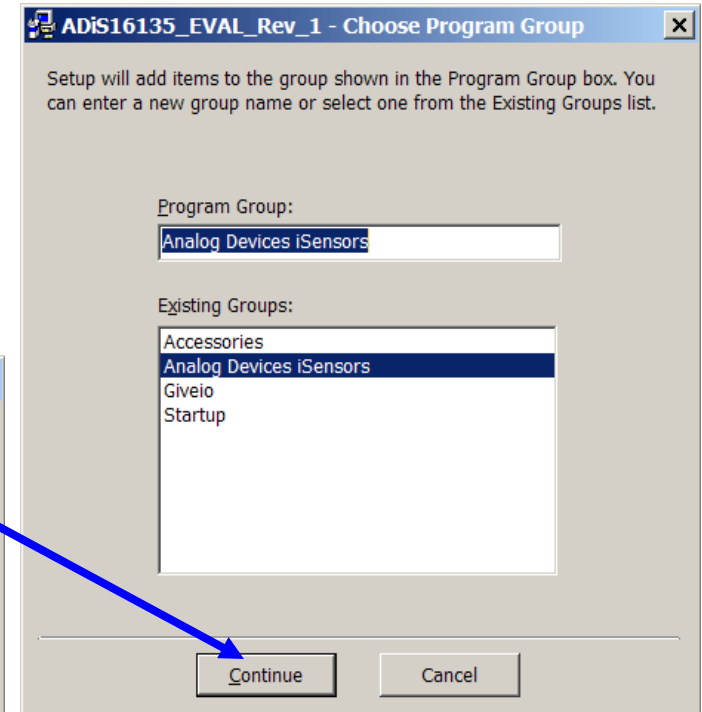
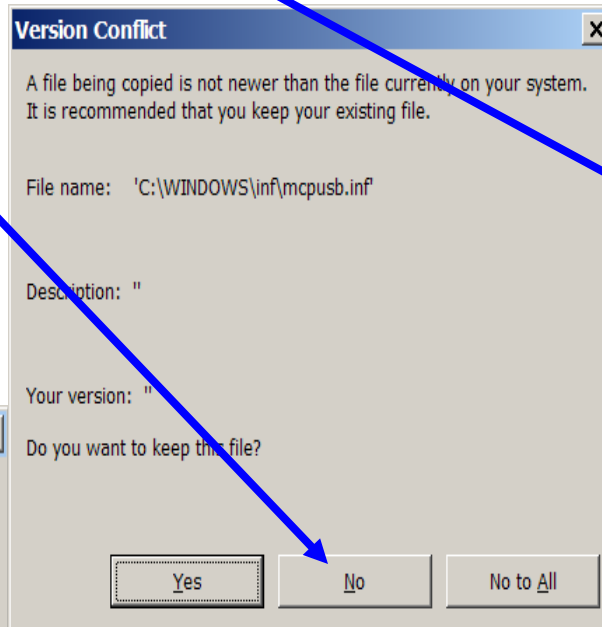
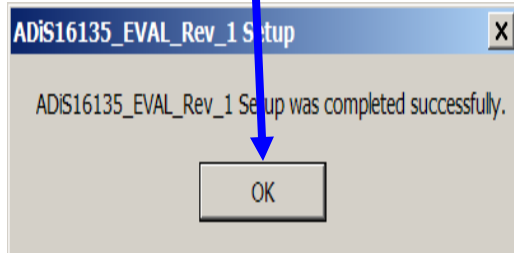
## ADIS16135 Demonstration Software Installation

### Installation Steps (continued)

6. Click **Continue**

7. If this message comes up, click on **No**

8. Click **OK**

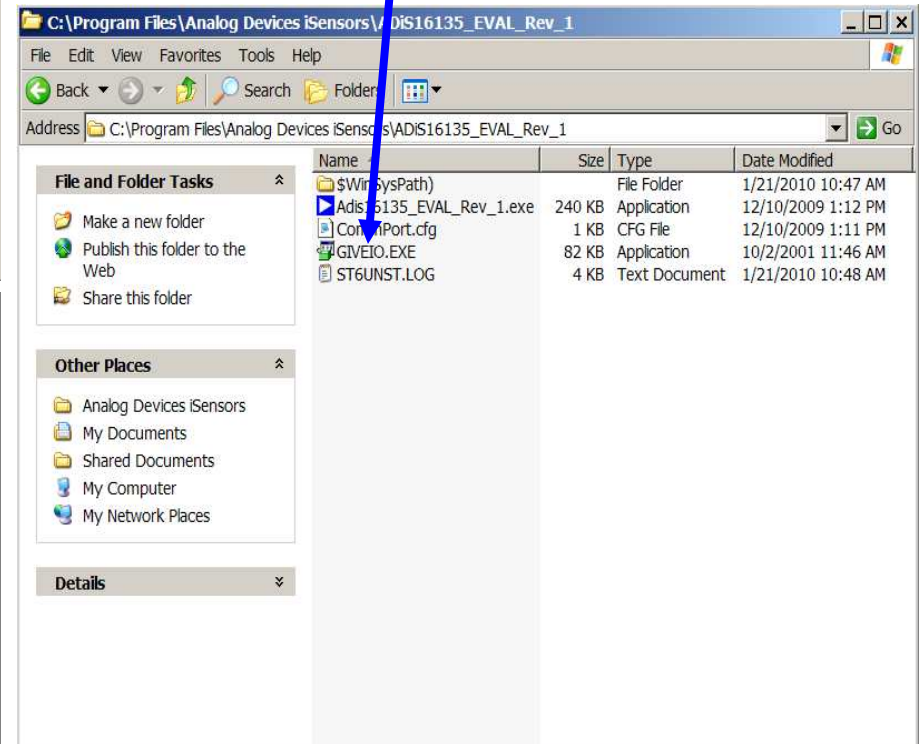
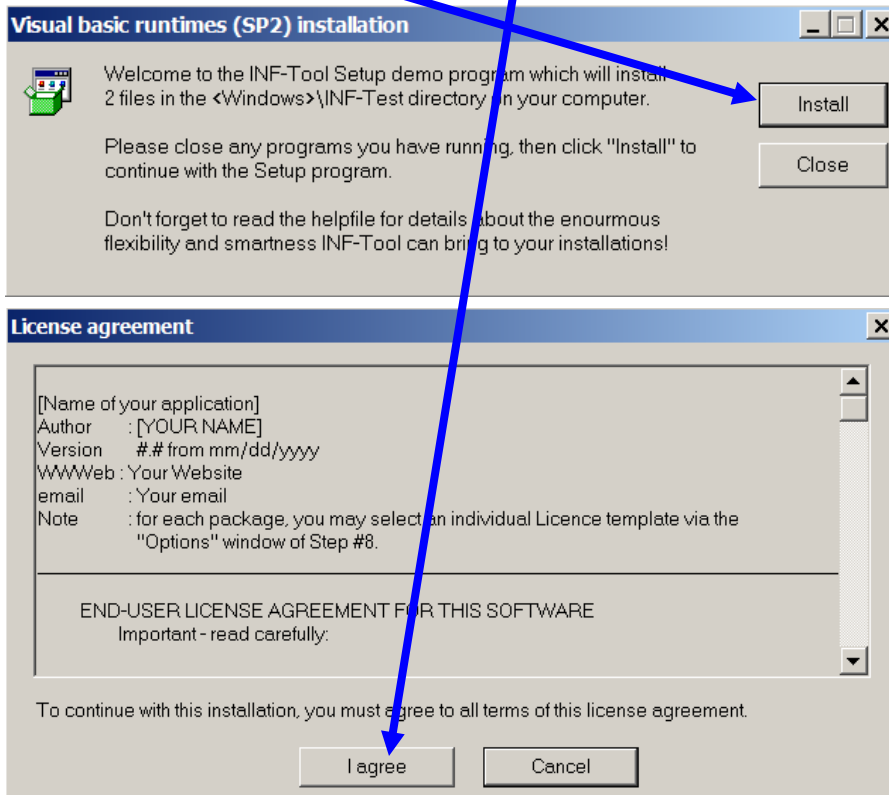


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## ADIS16135 Demonstration Software Installation

### Installation Steps (continued)

9. Open the newly created directory and double-click onto **GIVEIO.EXE**
10. Click **Install**, then **I agree**

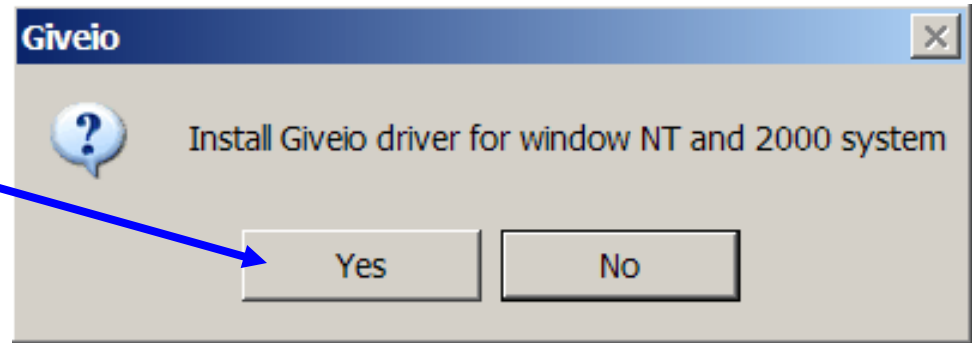


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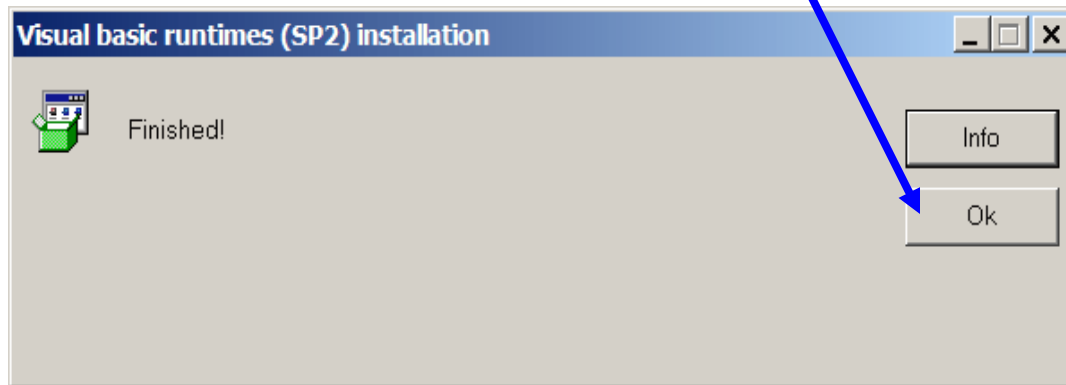
## ADIS16135 Demonstration Software Installation

### Installation Steps (continued)

11. Click **Yes**



12. Giveio Driver complete, click **OK**





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## ADIS16135BMLZ Installation on ADISEVALUSBZ-135

### Installation Steps (continued)

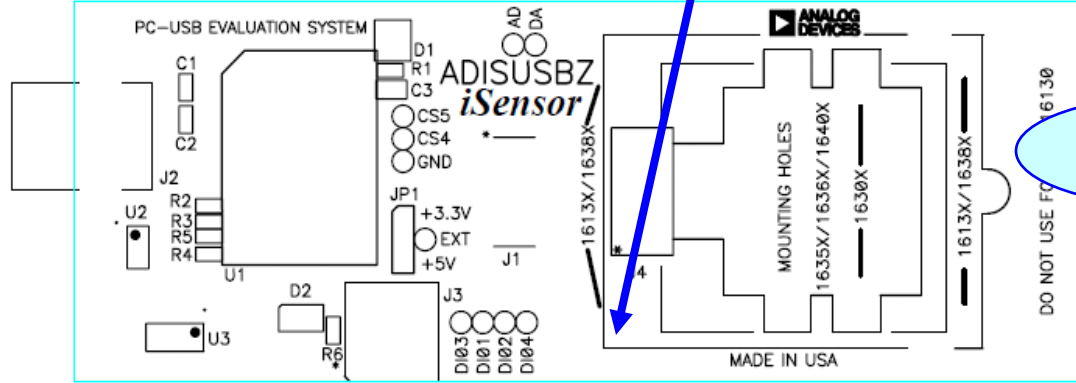
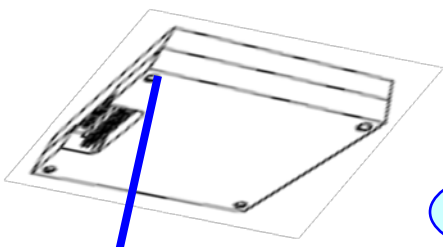
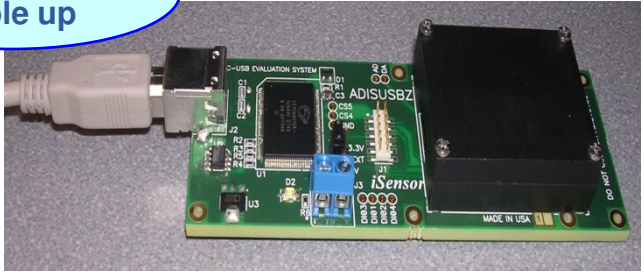
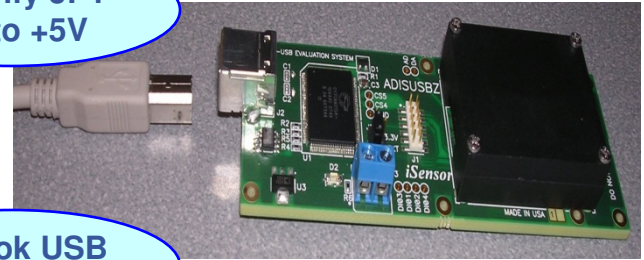
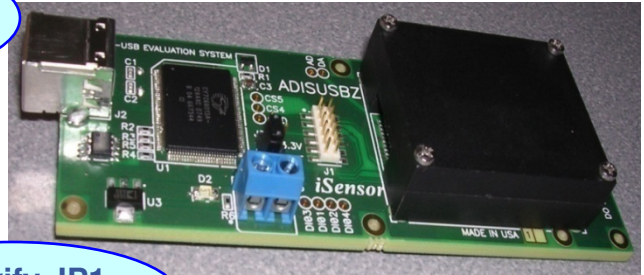
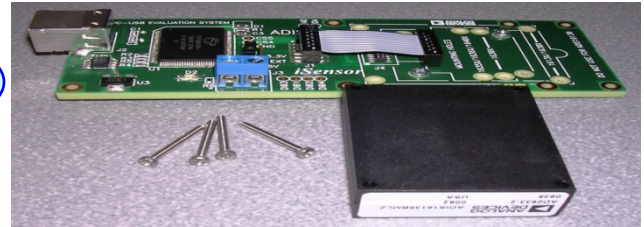
13. Install ADIS16135BMLZ on ADISEVALUSBZ
14. Remove ribbon cable and screws
15. Carefully insert the ADIS16135BMLZ into the J4 connector
16. Secure part with 2x18mm screws

1. Secure with 2x18mm screws

2. Attach 135/PCBZ to J4 Connector

3. Verify JP1 set to +5V

4. Hook USB cable up



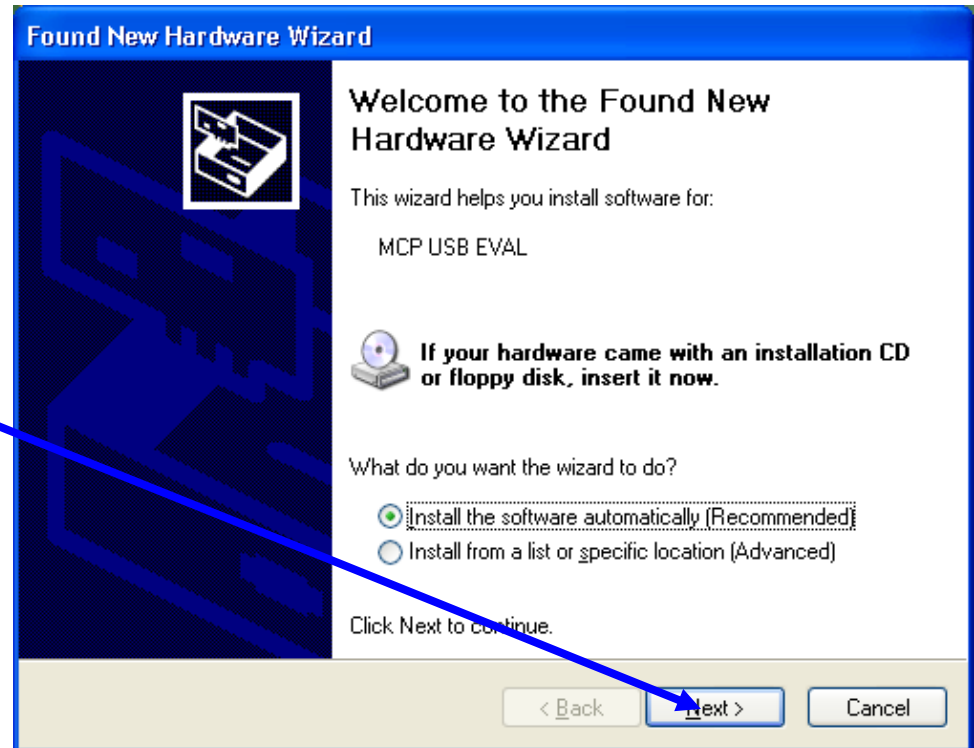
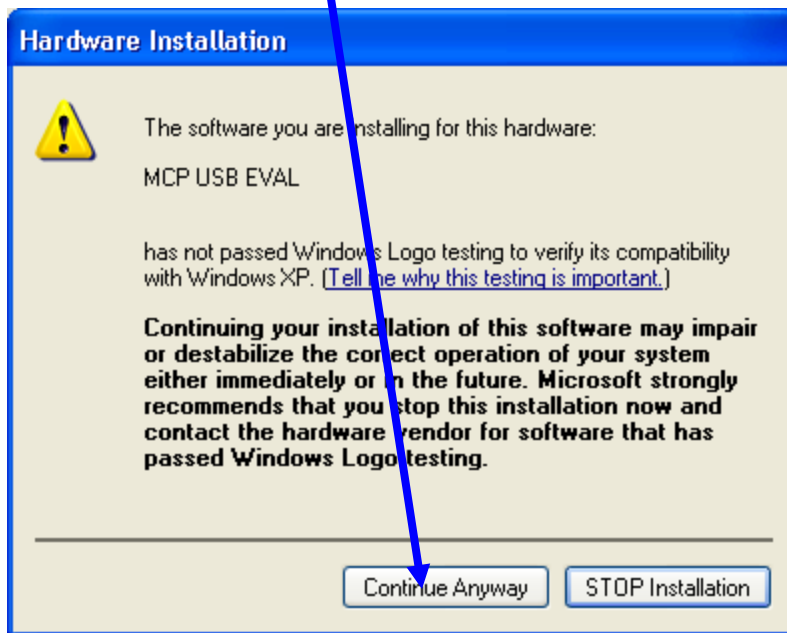
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## ADIS16135 Demonstration Software Installation

### Installation Steps (continued)

17. USB Driver screen will pop-up  
Click **Next** to start this process

18. Then click on  
**Continue Anyway**



This process will repeat for a second driver file. Just follow the instructions and allow it to go through one more time. After completing this, the devices is ready for test.

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## ADIS16135 Demonstration Tips—Verify USB Driver

The screenshot shows the 'Analog Devices - ADIS 16135 Evaluation Software - Rev 1' window. The 'Output Registers' section on the left has a blue arrow pointing to the 'Gyro\_Out (d/s)' field, which contains the value -0.233. A callout bubble next to it says '#1 Click here to access setup'. The 'Status Register' section below it shows several status indicators, all with green 'OK' buttons. In the center, a 'Data Plot' window shows a graph of Gyro (g) vs. Sample Number. A 'USB SPI Card Selection' dialog box is open over the plot, with a blue arrow pointing to the 'OK' button. A callout bubble next to it says '#2 Click OK to verify'. The dialog box has a 'Buffer Select' section with radio buttons for 'EzUsb0' through 'EzUsb3' and 'None'. The 'EzUsb0' option is selected, and its fields show 'MCP SPI', '0.1', and '2.0'. There are also 'Debug' and 'Search' buttons in the dialog.

**Output Registers**

Gyro\_Out (d/s)   Plot

Temp (degC)

op

**Status Register**

Power Supply Low

Control Register

SPI Write Flag

Gyro Overrange

Self Test

Flash Memory

Alarm1 Set

Alarm2 Set

**Data Plot** Device = 16135

Cursor (g) -293  
sample # 215

Plot Scale

Sample Number 0 85 175 260 350

**USB SPI Card Selection**

**Buffer Select**

	Descriptor0	Rev	Speed
<input checked="" type="radio"/> EzUsb0	MCP SPI	0.1	2.0
<input type="radio"/> EzUsb1	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="radio"/> EzUsb2	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="radio"/> EzUsb3	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="radio"/> None			

**Self Test**

Self-Test  OFF  ON

**Powerdown**

Set  sec  Elapsed  sec

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## ADIS16135 Demonstration Tips—Initial Start up

The screenshot displays the 'Analog Devices - ADIS 16135 Evaluation Software - Rev 1' interface. The 'Output Registers' section shows 'Gyro\_Out (d/s)' at -0.156 and 'Temp (degC)' at 22.491. The 'Status Register' section shows various status indicators (OK). The 'Data Plot' section shows a plot of 'Gyro Out (g)' vs 'Sample Number' with a value of -292 at sample 285. A blue callout bubble points to the 'Read' button and the 'Gyro Out (d/s)' value, with the text: '#3 Click Read to see if Gyro Out is close to "0" when board is laying flat on a table'.

**Output Registers**

Gyro\_Out (d/s)   Plot

Temp (degC)

Loop

Loop Delay msec

**Status Register**

Power Supply Low

Control Register

SPI Write Flag

Gyro Overrange

Self Test

Flash Memory

Alarm1 Set

Alarm2 Set

**Data Plot** Device = 16135

Cursor (g) -292

sample # 285

Plot Scale

Self Test

Self-Test  OFF  ON

Powerdown

Set  sec  Elapsed  sec

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## ADIS16135 Demonstration Tips—AUTO-Null

**Output Registers**

Gyro\_Out (d/s)   Plot

Temp (degC)

Loop

5

**Status Register**

- Power Supply Low  OK
- Control Register  OK
- SPI Write Flag  OK
- Gyro Overrange  OK
- Self Test  OK
- Flash Memory  OK
- Alarm1 Set  OK
- Alarm2 Set  OK

**Data Plot** Device = 16135

Cursor (g) -292  
sample # 285

Plot Scale

0 Samp 350

**Calibration**

**Automatic Features**

Restore Factory Calibration

Auto Null

**Manual Calibration Adjustment**

**Gyroscope**

Offset  deg / sec  58C

Decimate  (0-16)  0

Register Contents

**Self Test**

Self-Test  OFF  ON

set  sec  elapsed  sec

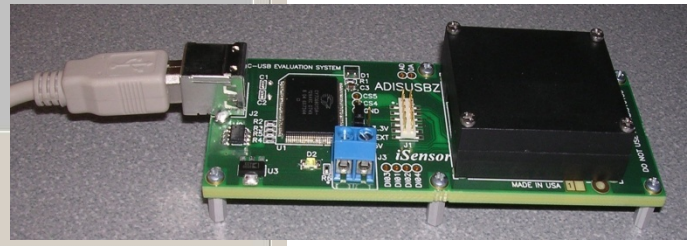
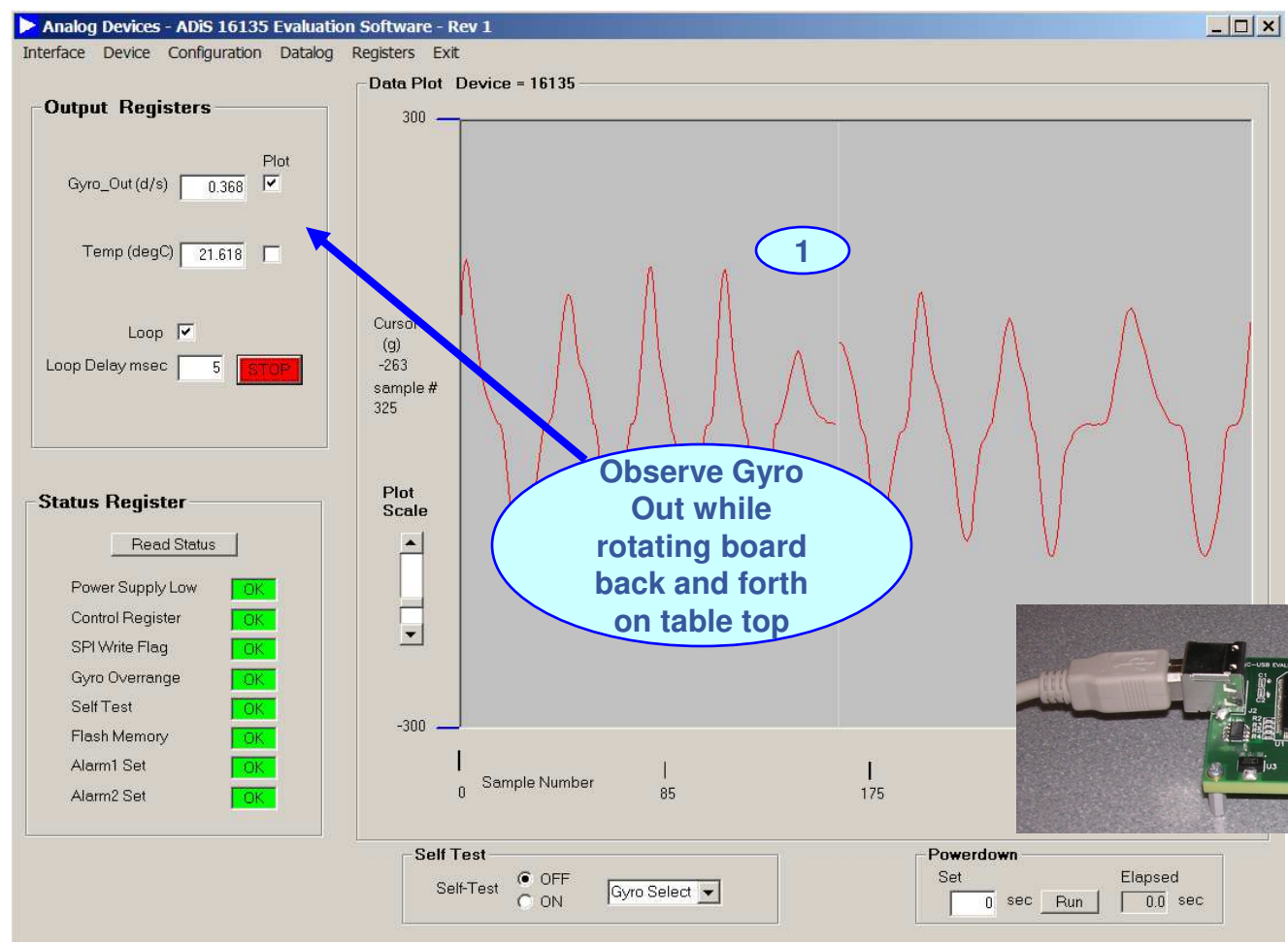
Select Configuration and Calibration

While the part is flat on the table top click on Run button. When complete, click on Update, then Flash Memory Update.

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## ADIS16135 Demonstration Tips— Gyro

1. Watch the Gyro Out response on screen.



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## ADIS16135 Demonstration Tips— Alarms??

**Output Registers**

Gyro\_Out (d/s)   Plot

Temp (degC)

Loop

Loop Delay msec

**Status Register**

Power Supply Low

Control Register

SPI Write Flag

Gyro Overrange

Self Test

Flash Memory

Alarm1 Set

Alarm2 Set

**Data Plot Device = 16135**

Cursor (g) -292  
sample # 285

Plot Scale

0 Sample Number 85 175 260 350

**Self Test**

Self-Test  OFF  ON

**Powerdown**

Set  sec  Elapsed  sec

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## ADIS16135 Demonstration Tips— Alarm Set up

**ALARM/DIO LINE CONFIGURATION AND CONTROL**

**ALARM 1**

Source: Gyro Out

Trigger: 50.000 ALM\_MAG1: F61

Trigger: **2**  Greater than  Less than

ROC Sample: 0 ALM\_SMPL1: 0

Rate of change:  Enabled  Disabled

**ALARM 2**

Source: Disabled

Trigger: 0.000 ALM\_MAG2: 0

Trigger:  Greater than  Less than

ROC Sample: 0 ALM\_SMPL2: 0

Rate of change:  Enabled  Disabled

**Digital Alarm Indicator**

Digital Alarm:  Enabled  Disabled

Digital Line:  DI/O1  DI/O0

Output Polarity:  High  Low

Filtered Select:  Filtered  Unfiltered

**3** Update

**\*Update button must be pressed to activate all option changes!**

**Auxilliary Digital I/O Configuration**

**Configure as a general purpose I/O line**

Digital I/O Line 0:  Input  Output

Set Line 0 Level:  High  Low

Digital I/O Line 1:  Input  Output

Set Line 1 Level:  High  Low

**Configure as a data ready line**

Enable:  ON  OFF

Select I/O line:  DI/O1  DI/O0

Output Polarity:  High  Low

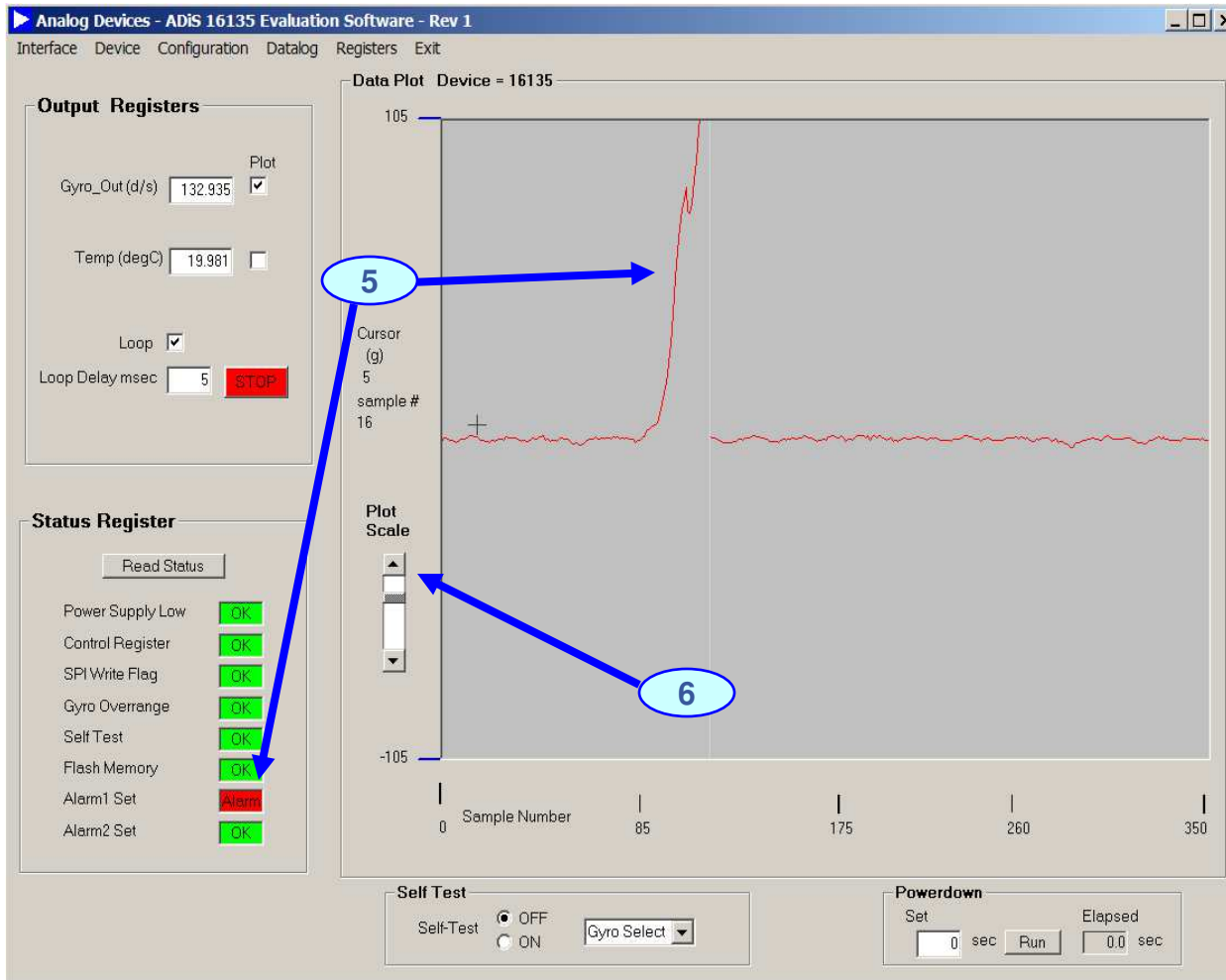
**4** Close Window Flash Memory Register Update

1. Set Alarm 1 source for Gyro Out.
2. Set the Trigger level to 50 and Greater Than
3. Click the Update button to accept changes
4. Click on Close Window to return to the main screen



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## ADIS16135 Demonstration Tips— Alarms Continued



5. Alarm 1 is set when the Gyro level is above 50
6. The Plot Scale can be changed for a more accurate reading by moving the slider



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## ADIS16135 Demonstration Tips— Collect Data

**1** Output Registers

Gyro\_Out (d/s) -0.156  Plot

Temp (degC) 22.491

Loop

Loop Delay msec 5

**2** FILE SETUP

Samples per File 1000

Sample Delay msec 0

Files per Session 1

**3** DATA SELECTION

Temp

Gyro Out

**4** FILE INFORMATION

Directory C:\Program Files\Analog Device

File Name DATALOG

File 1 .csv

**5** Start Datalog

Output Registers: Gyro\_Out (d/s) -0.156, Temp (degC) 22.491, Loop Delay msec 5, Read button.

Status Register: Read Status button, Power Supply Low OK, Control Register OK, SPI Write Flag OK, Gyro Overrange OK, Self Test OK, Flash Memory OK, Alarm1 Set OK, Alarm2 Set OK.

Data Plot: Device = 16135, Cursor (g) -292, sample # 285, Plot Scale, Sample Number.

Self Test: Self-Test OFF, Gyro Select dropdown, 0 sec Run 0.0 sec.

1. Select Datalog on the main screen
2. File Setup- enter # of samples delay and # of files
3. Data Selection- Choose the output data you want
4. File Information- Enter the file name and # of files
5. Start Datalog- Click the button to begin data processing
  - a. File is output to program file folder created during installation



◆ **CONTACTS:**

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