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ADIS16240 Evaluation Tool Overview



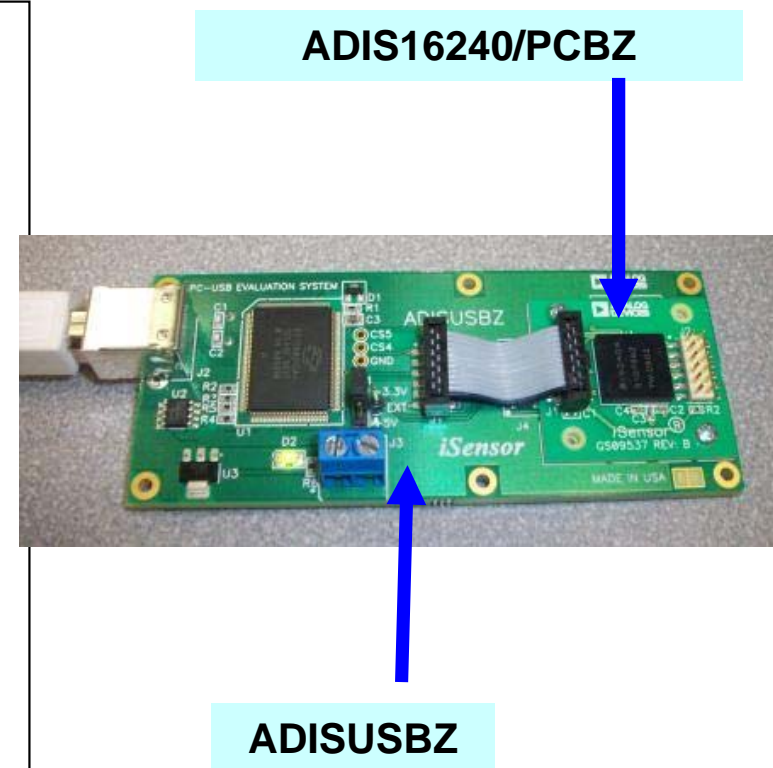
Mark Looney
iSensor® Application Engineer
September 7, 2009



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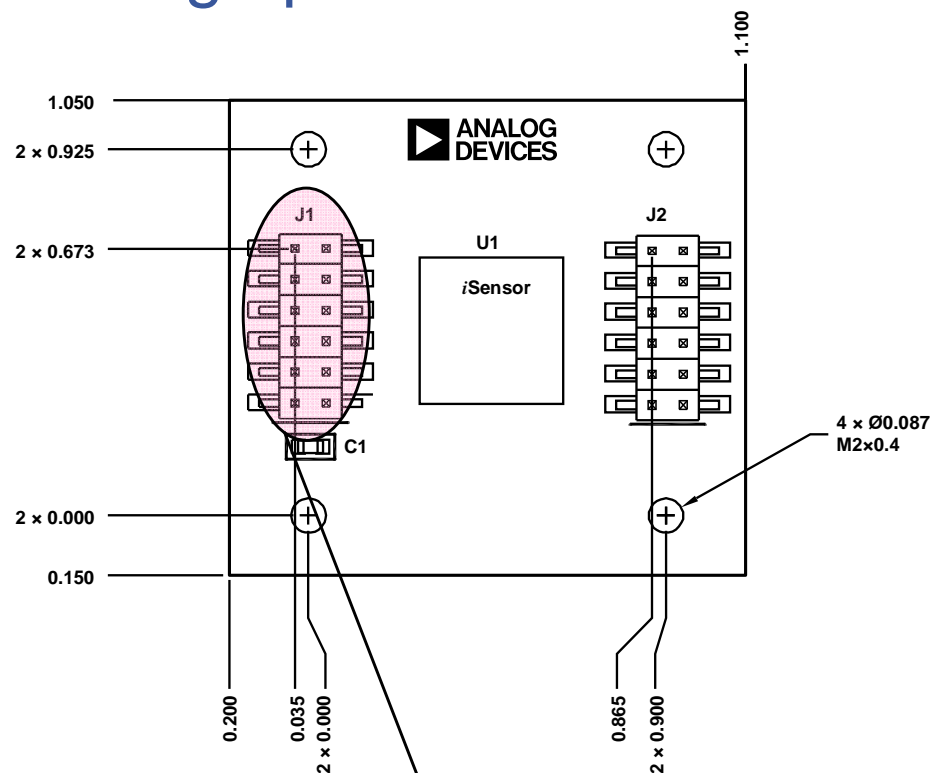
Evaluation Tool Overview

1. **Evaluation/Interface Board (ADIS16240/PCBZ) for simpler connection to an existing processor/system PCB.**
 - ◆ These boards provide a simple connector translation that enables user to bypass BGA soldering. The 2mm pitch connectors are easy to interface with 1mm ribbon cable or solder to.
 - ◆ Part number for ordering: **ADIS16240/PCBZ**
2. **Evaluation System (ADISUSBZ) for those that prefer a simple PC interface**
 - ◆ This system provides a simple USB interface, along with a simple Graphical User Interface (GUI) package, for evaluating most of the ADIS16240 functions and performance.
 - ◆ Supports approximately 150-200SPS sample rate.
 - ◆ This system is not a development kit that comes with PC development tools, source code and software support.
 - ◆ Part number for ordering: **ADISUSBZ**

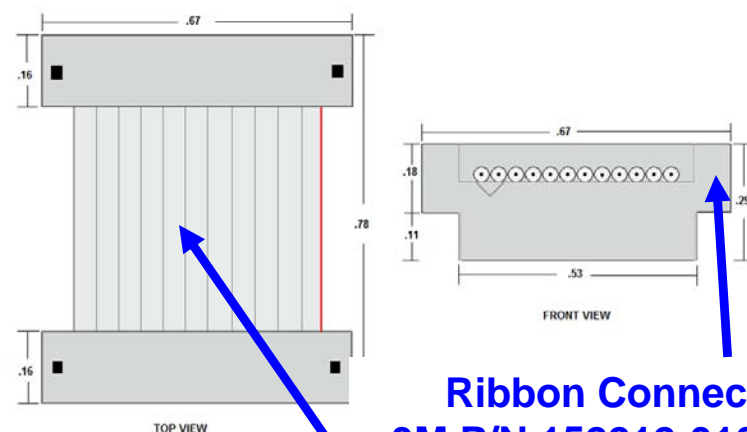


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Hooking up to the ADIS16240/PCBZ



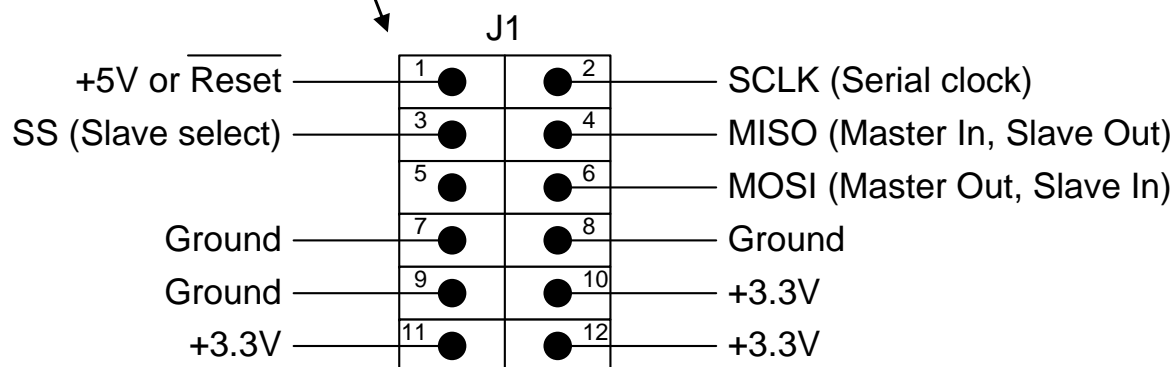
J1 Ribbon Cable Interface Parts



Ribbon Connector
3M P/N 152212-0100-GB

Ribbon Cable
3M P/N 3625/12 (100m)

Master Processor Connection



ADISUSBZ uses the following cable assembly from Samtec:

ASP-140062-01

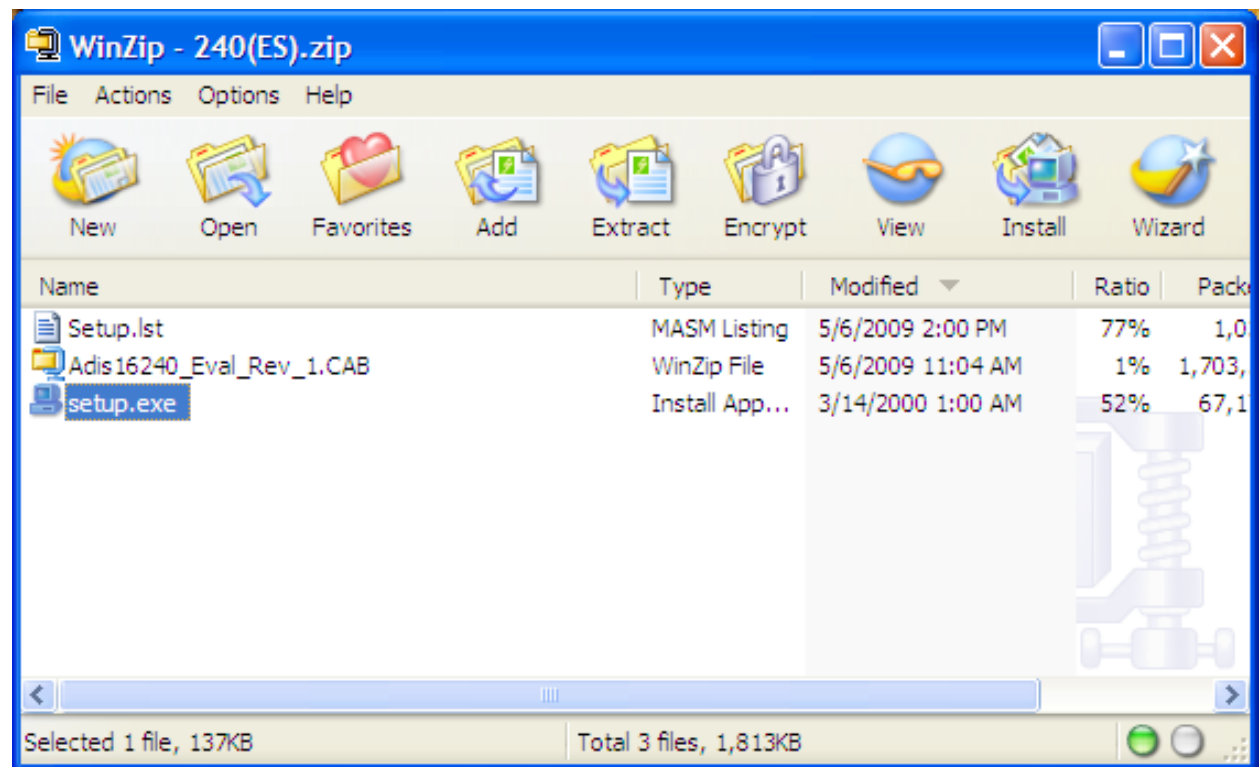
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ADIS16240 Demonstration Software Installation

The ADIS16240 demonstration software can be found at

www.analog.com/isensor-evaluation

1. Click on “Evaluation Software Downloads”
2. Click on 240ES.zip and save it to a temporary directory
3. Open it and double click on setup.exe.

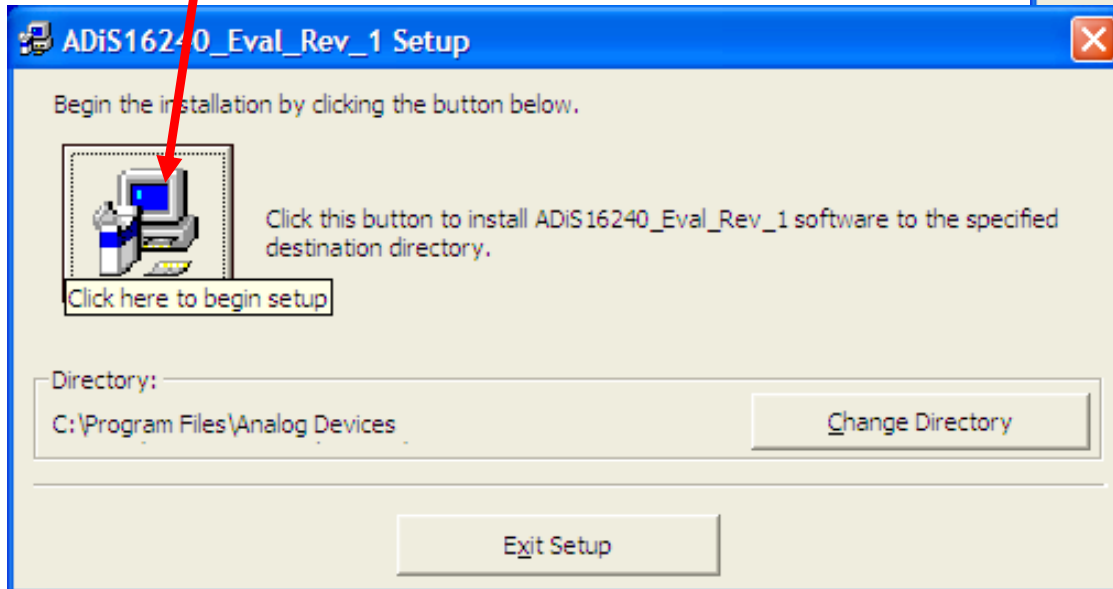
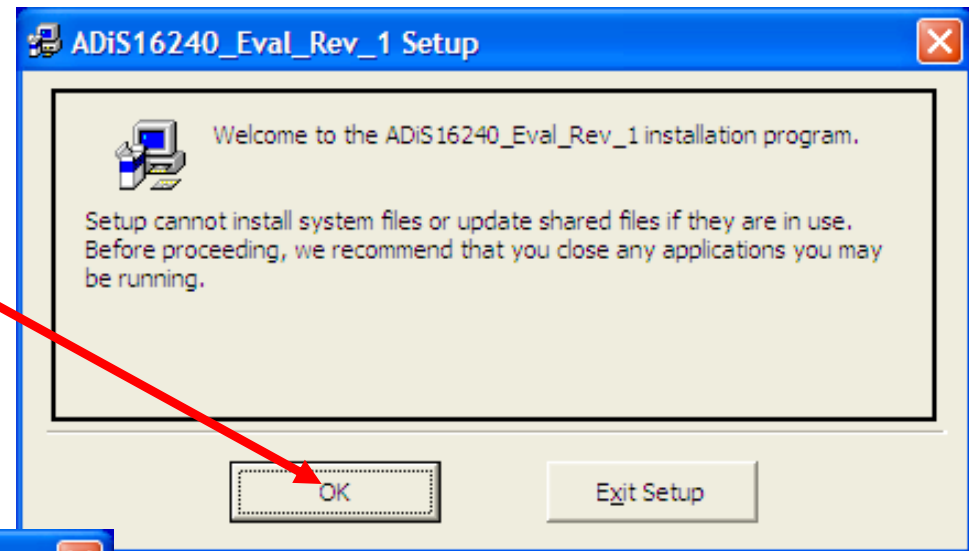


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ADIS16240 Demonstration Software Installation

Installation Steps (continued)

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



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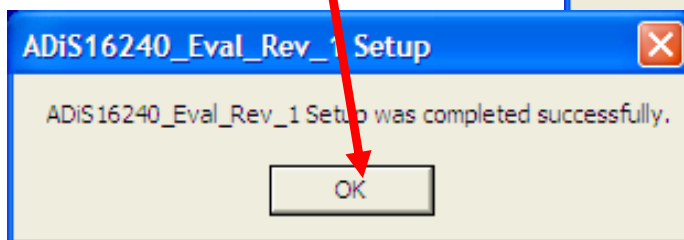
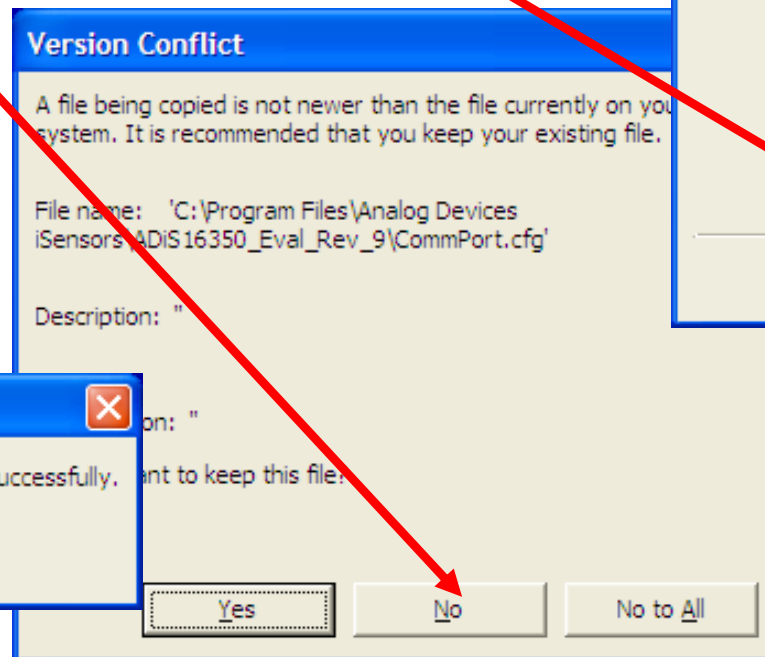
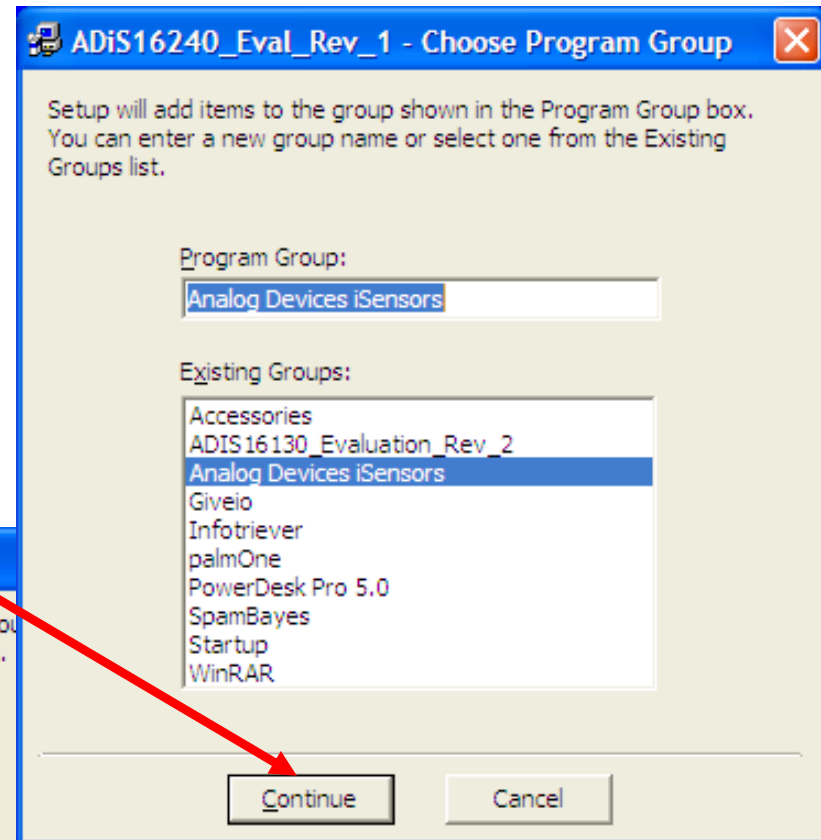
ADIS16240 Demonstration Software Installation

Installation Steps (continued)

6. Click Continue

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

8. Click OK



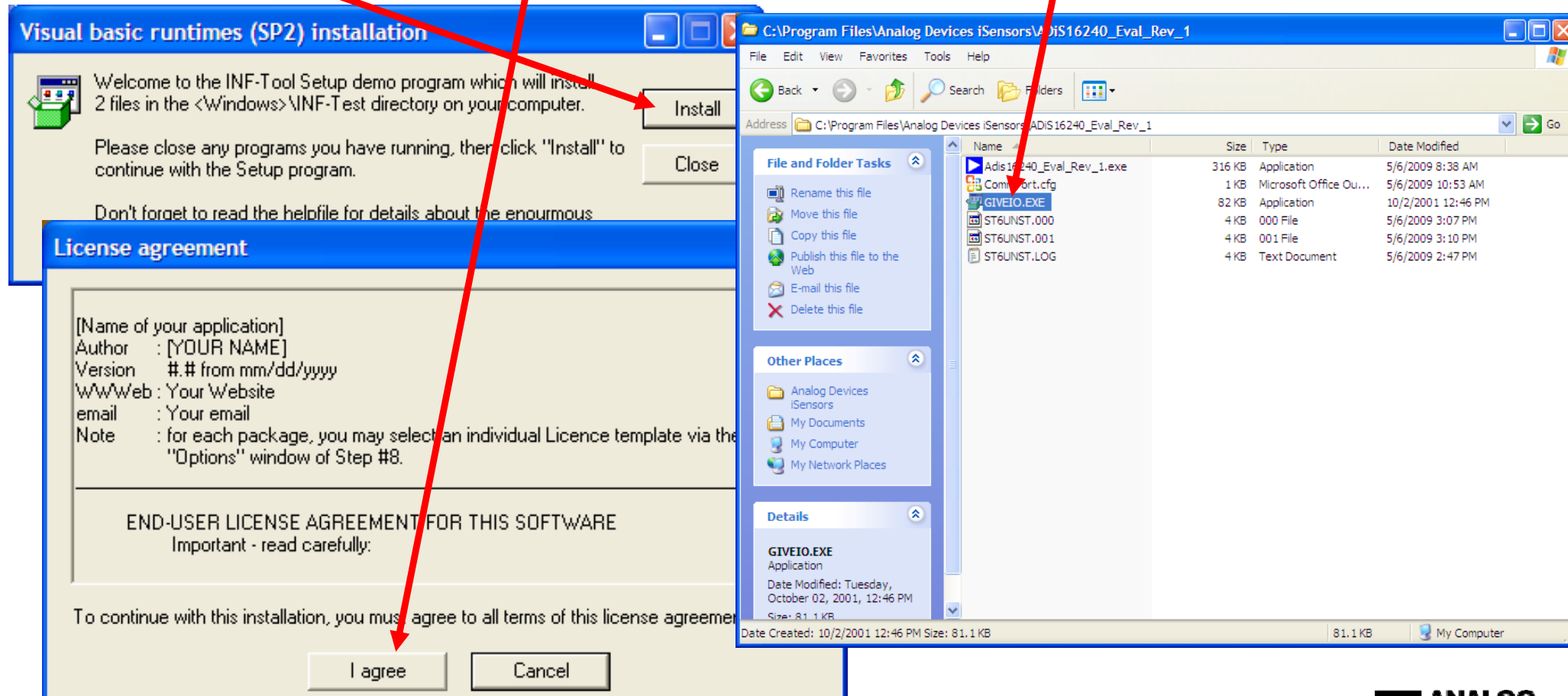
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ADIS16240 Demonstration Software Installation

Installation Steps (continued)

9. Open the newly created directory and double-click onto “giveio.exe”

10. Click “Install,” then “I Agree”



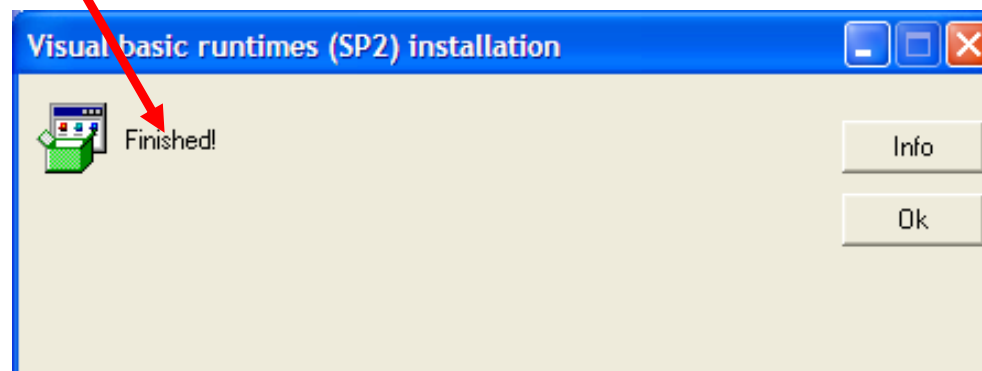
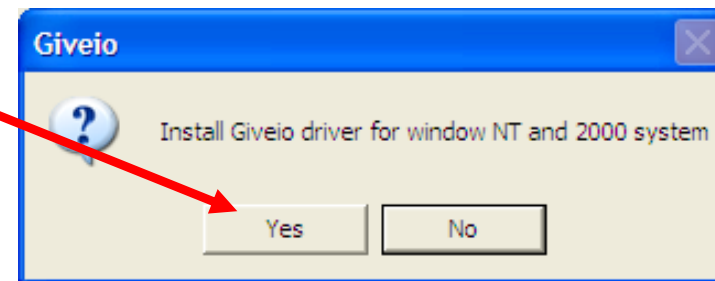
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ADIS16240 Demonstration Software Installation

Installation Steps (continued)

11. Click “yes”

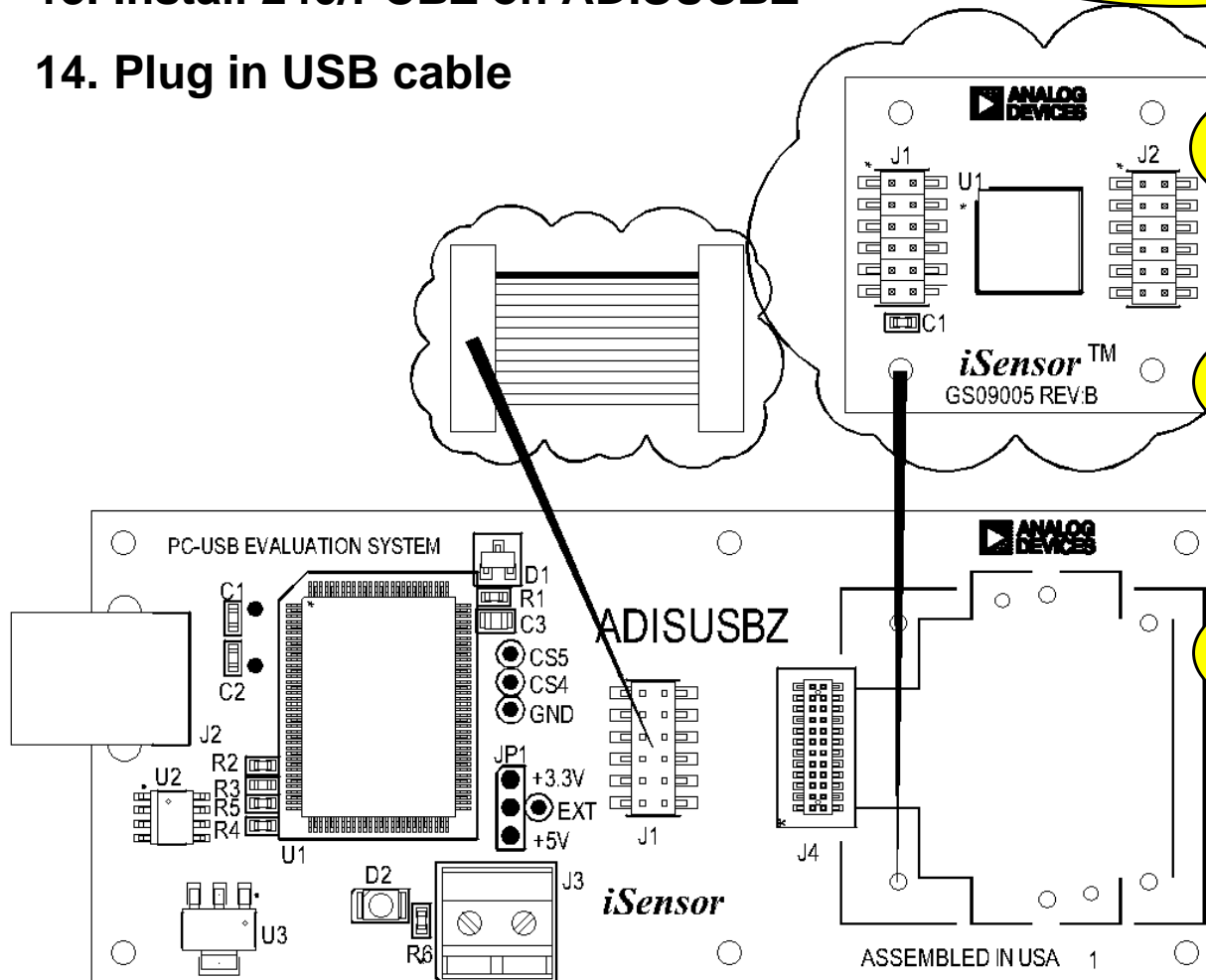
12. Giveio Driver complete



Installation Steps (continued)

13. Install 240/PCBZ on ADISUSBZ

14. Plug in USB cable

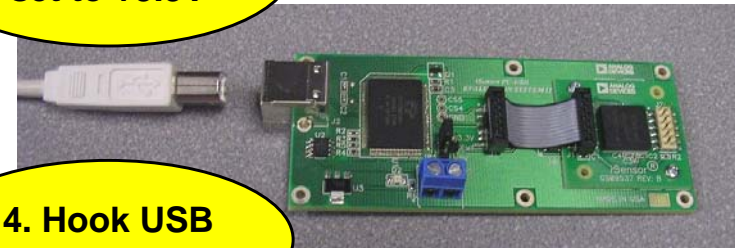
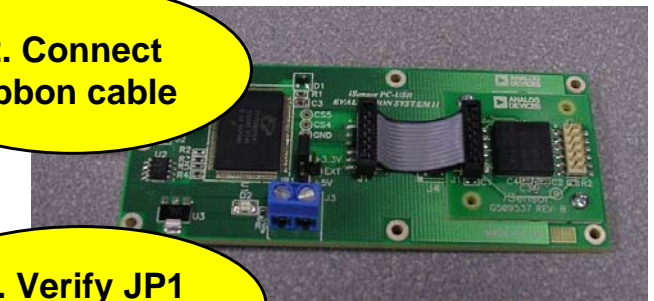


**1. Secure
240/PCBZ w/
2mm screws**

2. Connect ribbon cable

3. Verify JP1 set to +3.3V

4. Hook USB cable up



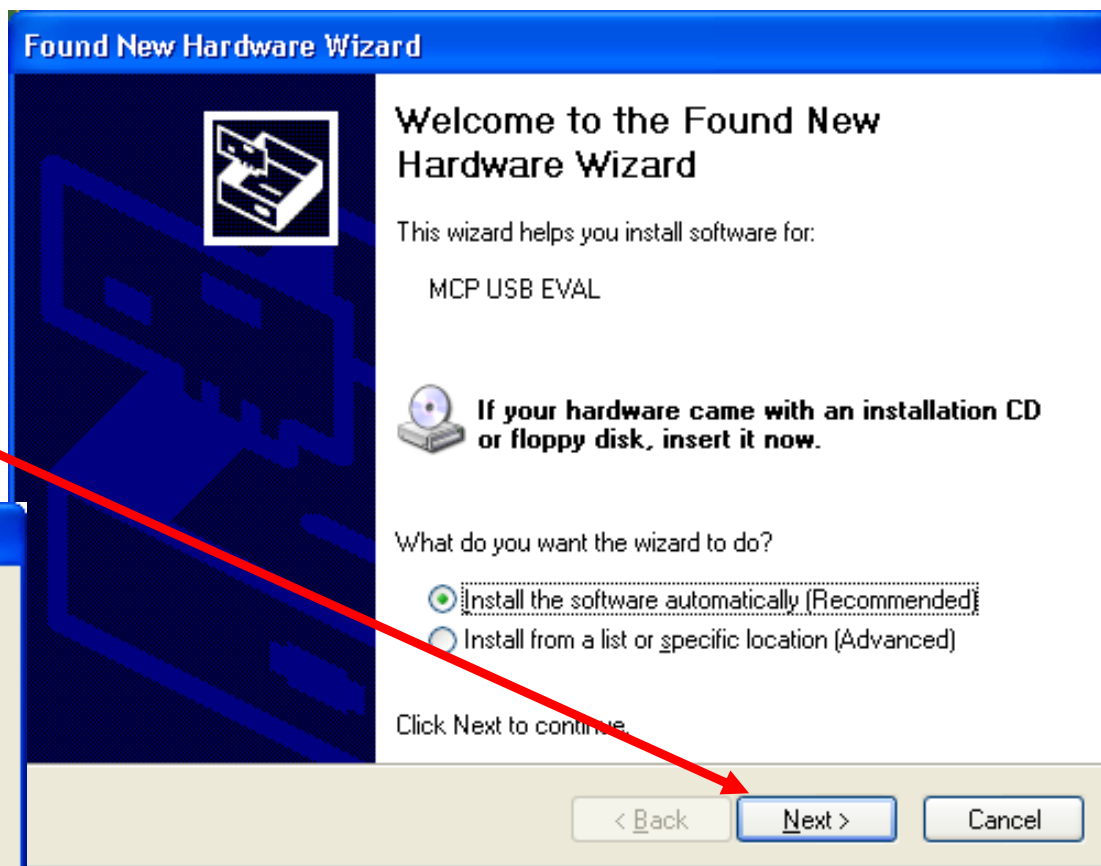
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ADIS16240 Demonstration Software Installation

Installation Steps (continued)

15. USB Driver screen will pop-up
Click “Next” to start this process

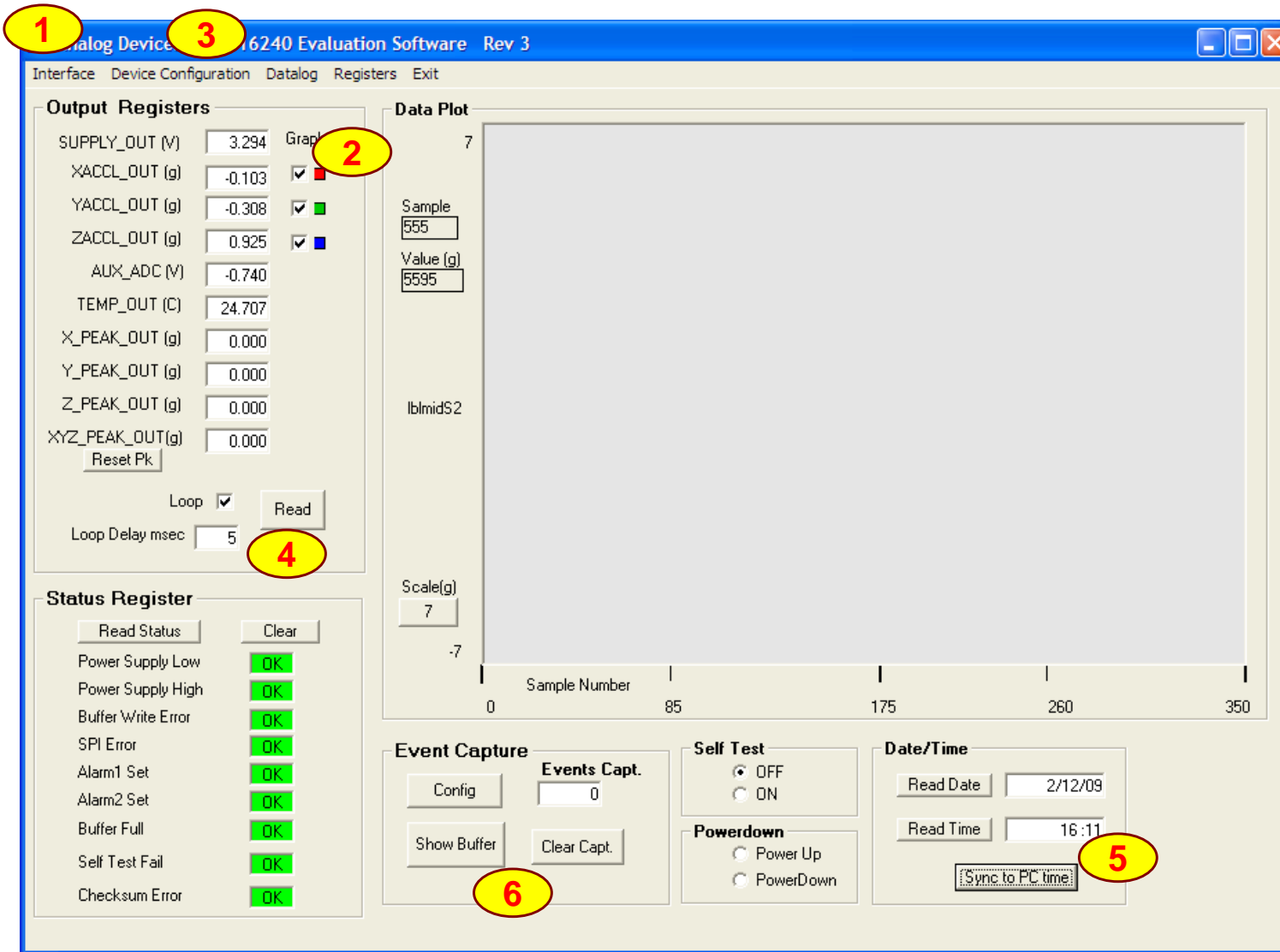
16. Then click on
“Continue Anyway”



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, then the devices is ready for test.

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ADIS16240 Demonstration Software Screen



1. Click on "Interface" and select USB, then OK when the pop-up window shows the USB device is connected.
2. Click to enable different accelerometer axes (x,y,z)
3. Device configuration options. Turn on peak tracking (MSC_CTRL option), adjust sample rate, etc.
4. Start on-screen log
5. Sync ADIS16240's time to the current PC time.
6. Capture, Click on Config button and see next page

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ADIS16240 Demonstration Software Installation

ADIS Capture Configuration

ADIS16240 Event Trigger Configuration

Step #1 - Configure Capture Parameters (CAPT_CFG) 0023

Pre-Trigger Length Equals This Value Times 1/16 of Capt. Buff. Length: 2

Capt. Buff. Length: 128

Update CAPT_CFG Register

Step #2 - Set Trigger Source (ALM_CTRL) 3230

Data Source - Buffer #1: X_Acc

Data Source - Buffer #2: Y_Acc

Alarm I/O Line: OutPut Disabled, Active LOW, DIO0

Update ALM_CTRL Register

Step #3 - Set Trigger Levels and Polarity (TRIG_MAG) 804E 804E

ALM_MAG1 Polarity: Greater Than, ALM_MAG1 Trigger Level: 4.0092

ALM_MAG2 Polarity: Greater Than, ALM_MAG2 Trigger Level: 4.0092

Update TRIG_MAG1/2 Registers

Trigger Configuration Example:

Step 1 - Set Pre-trigger to zero then set Capt_Buff Length to 1024 and press the update Capt_CFG Register button

Step 2 - Set Data Source #1 to Xacc and select Trigger #1 button, Press the Update ALM_CTRL Register button

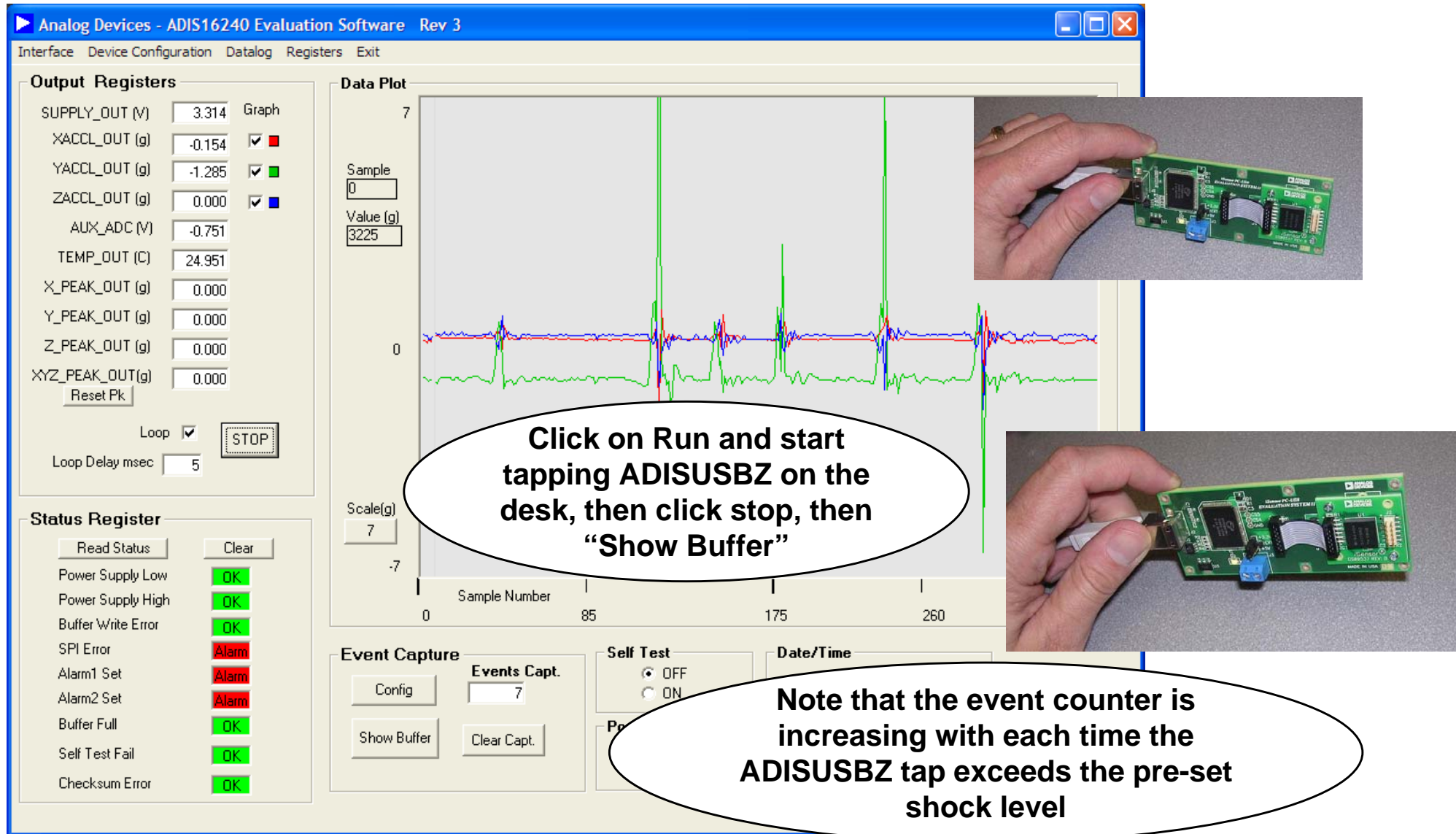
Step 3 - Set Trigger Level to 12 then set Polarity to greater than. Press the Update TRIG_MAG 1/2 Registers button

Update Flash

1. Set number of captures vs. capture length and pre-capture length. Remember to click on the update button!
2. Set trigger source. Suggest both triggers. Remember to click on the Update button!
3. Set trigger levels and polarity, then hit the Update button.
4. Updating the flash makes the changes non-volatile.
5. Click on the red X to close and return to the main menu

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ADIS16240 Demonstration Software Installation



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ADIS16240 Demonstration Software Installation



1. Place the mouse pointer over different spikes to see the Event header in the upper right hand corner change.
2. Slider bar in lower left hand corner will move event log as desired.



◆ CONTACTS:

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MORE INFORMATION:

- www.analog.com/isensor
- **New Brochure:** *i*Sensor Motion Sensor Products
 - ◆ BR067755-2.5-4/08(A)
- **CD's with Product Info and Eval SW**

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<http://moschip.ru/get-element>

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