The World Leader in High Performance Signal Processing Solutions
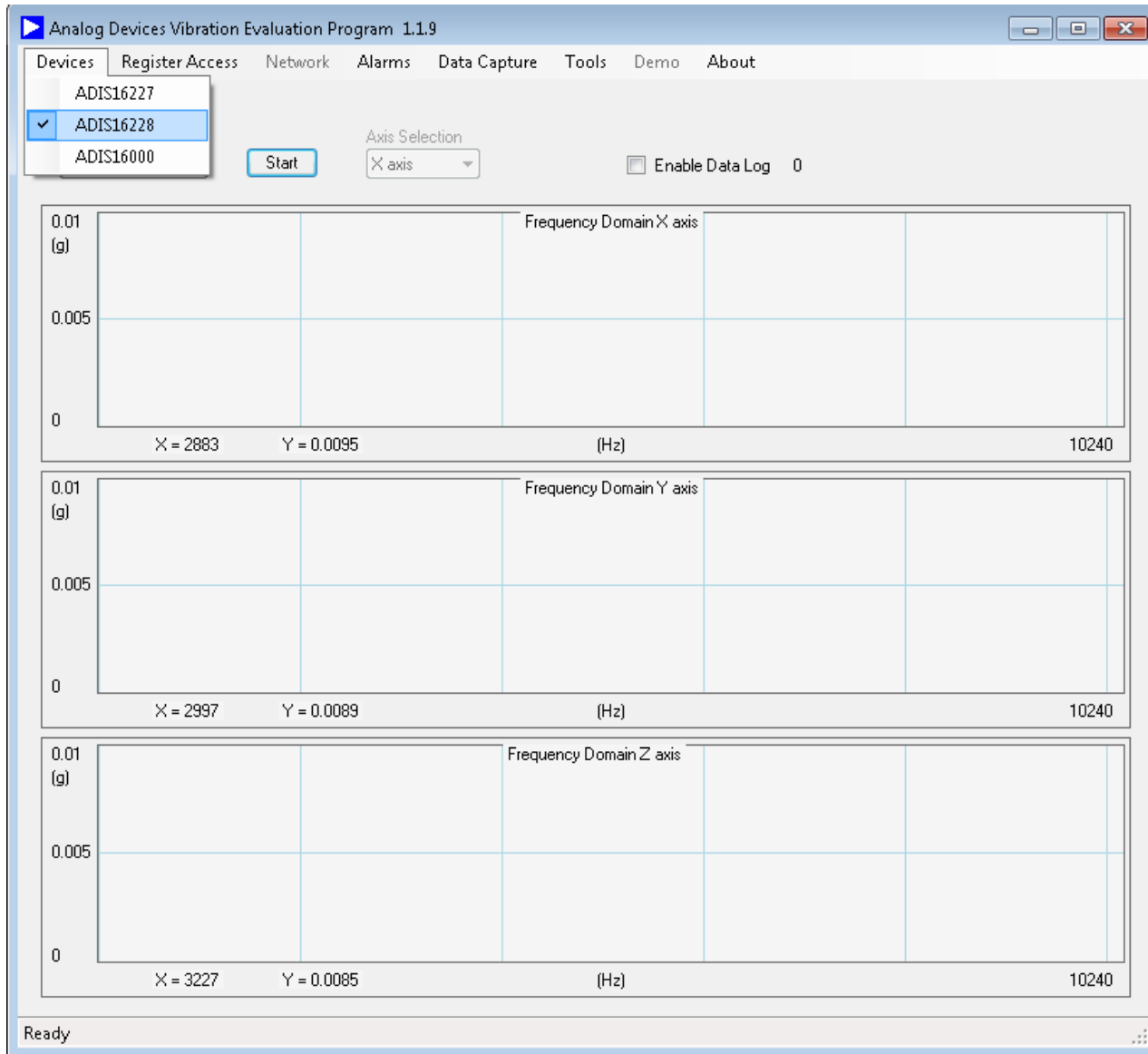
ADIS16228 Evaluation Tutorials

Detailed steps for executing a Manual FFT function,
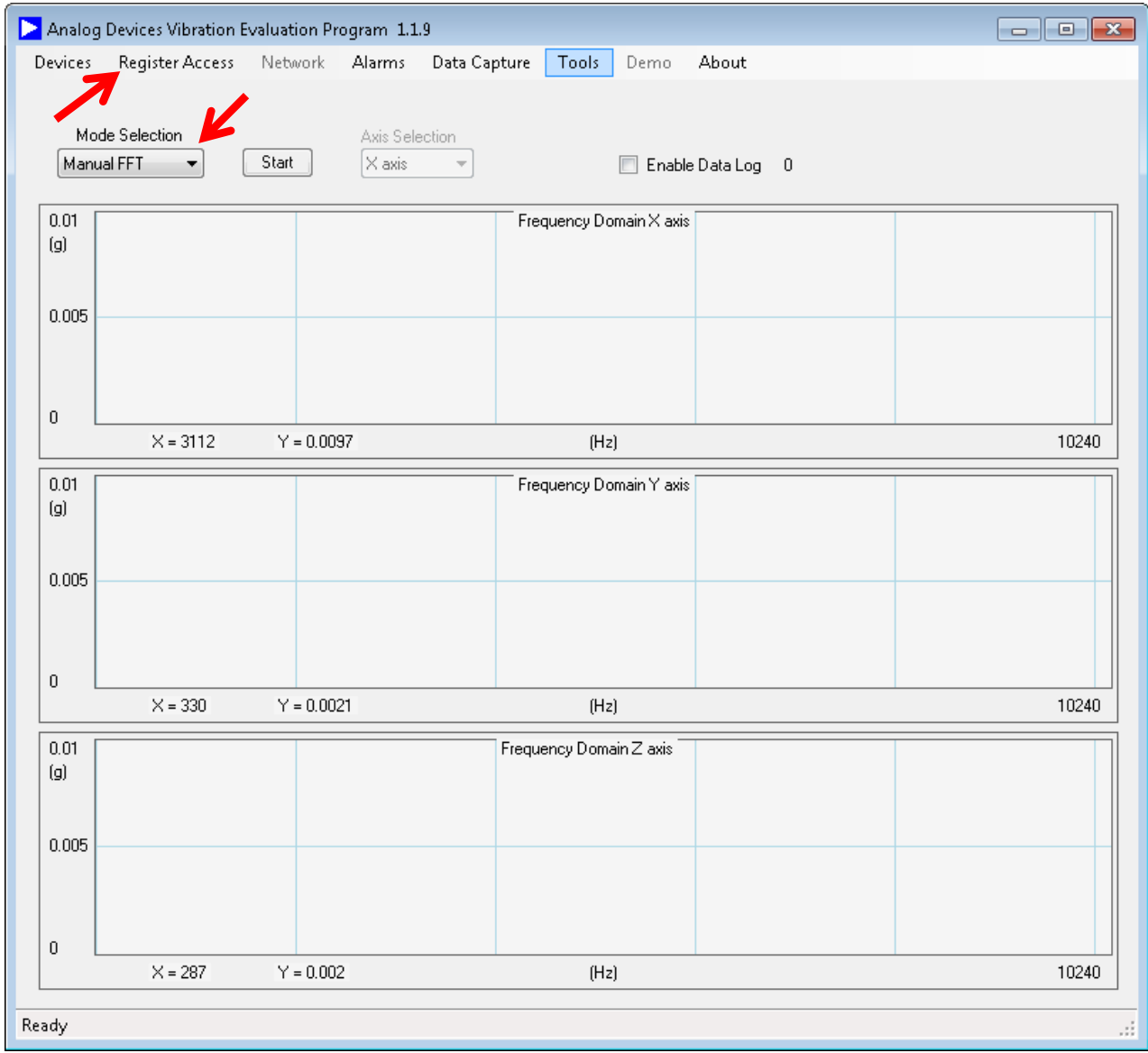using one sample rate setting.

January 2, 2014

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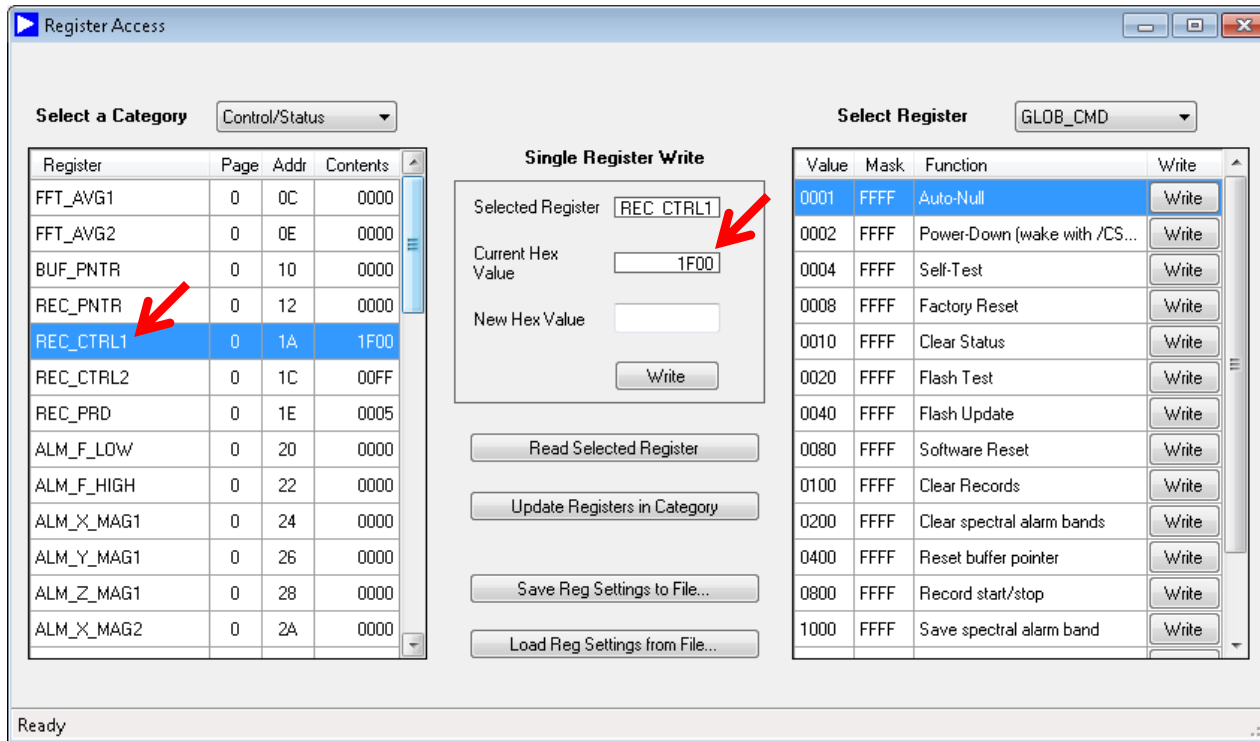# Launch software & Set Device = ADIS16228

Select mode & Launch Register Access Window

NOTES:

- Setting **Mode Selection** to **Manual FFT** is the equivalent of setting **REC_CTRL1[1:0] = 00**
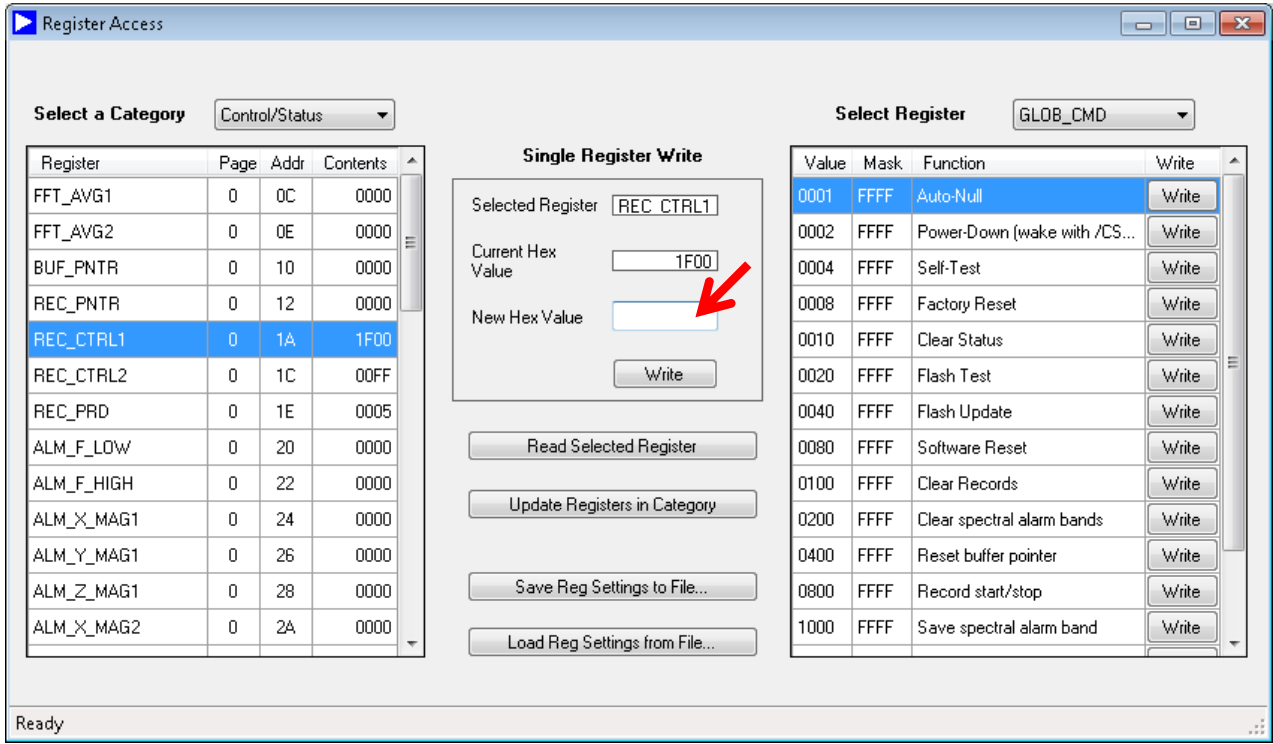
Click on REC_CTRL1

NOTES:

- Clicking on a register name causes an automatic read of its contents, which displays in the data box that is located next to **"Current Hex Value"**

Click on the white box, located next to "New Hex Value"

NOTES:

- In this example, the starting setting (**REC_CTRL1 = 0x1F00)** enables all four sample rates: SR0, SR1, SR2, and SR3.
- Change the value in the second nibble (**REC_CTRL1[11:8]**) from "**F**" to a "**1**" to disable SR1, SR2 and SR3, while leaving SR0 enabled.
- New register value: **REC_CTRL1 = 0x1100**
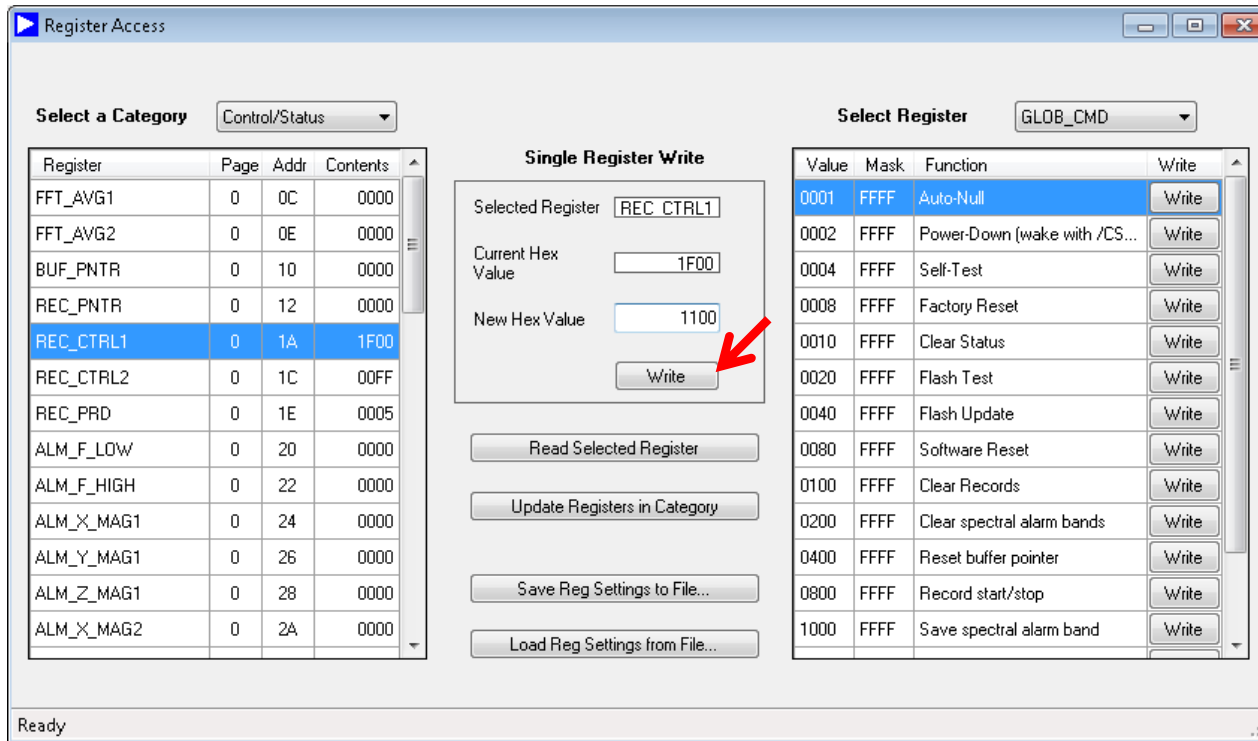
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Enter "1100" into the white box, located next to "New Hex Value"
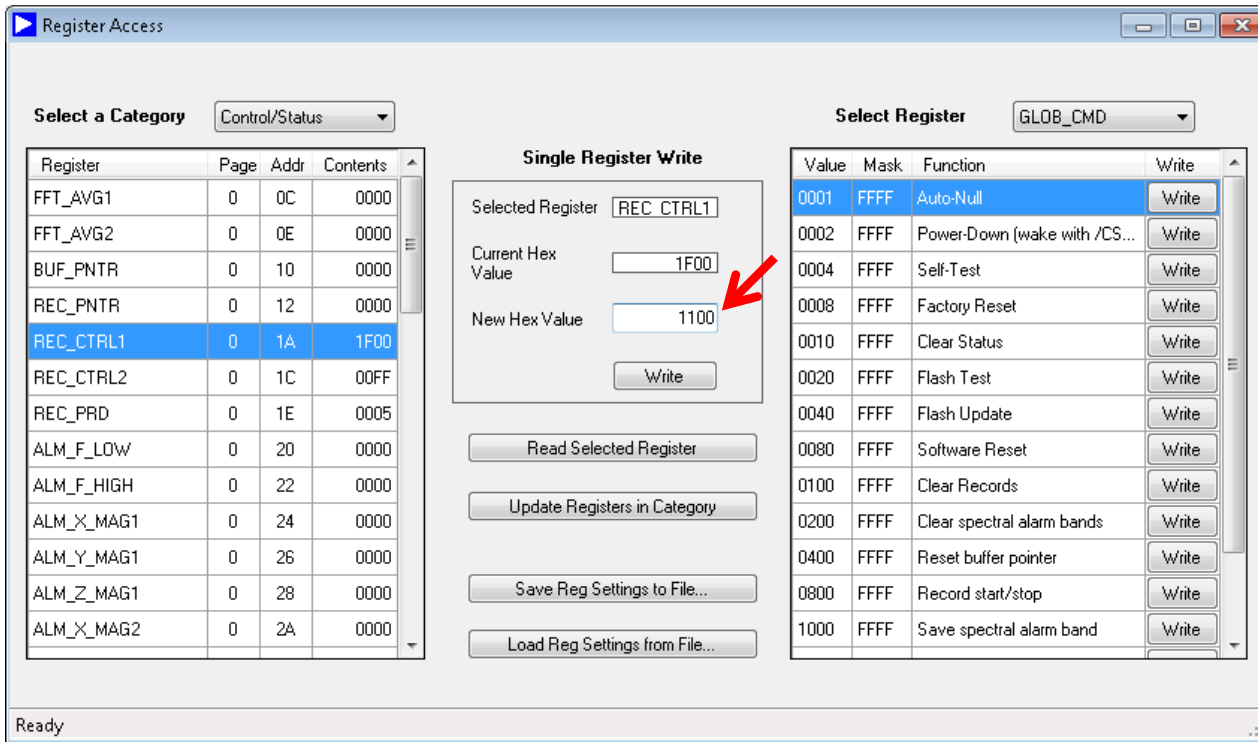
NOTES:

- Since the Register Access window writes register values, 2 bytes at a time, enter the hexadecimal code for the entire register.
- In this case, In this example, "**1100**" keeps all of the previous settings, except for the sample rate changes.

Click on the "Write" button

NOTES:

- Since the Register Access window writes register values, 2 bytes at a time, enter the hexadecimal code for the entire register.
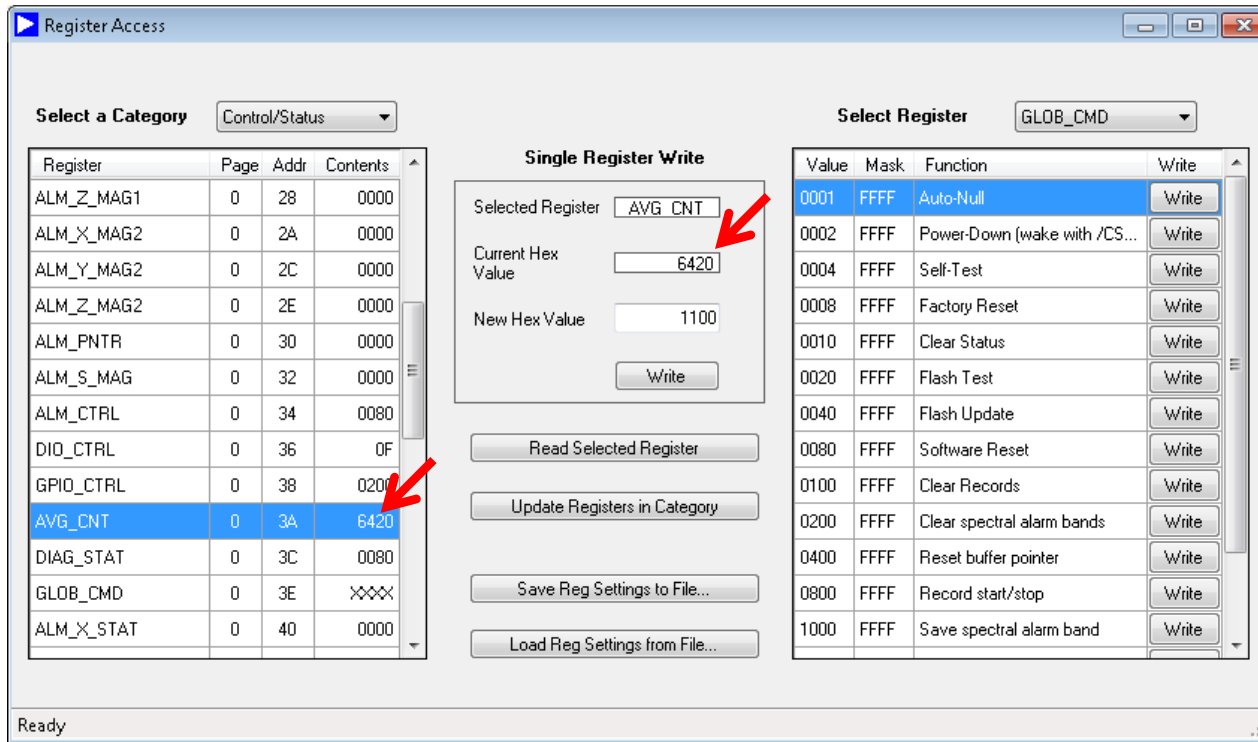- In this case, In this example, "**1100**" keeps all of the previous settings, except for the sample rate changes.
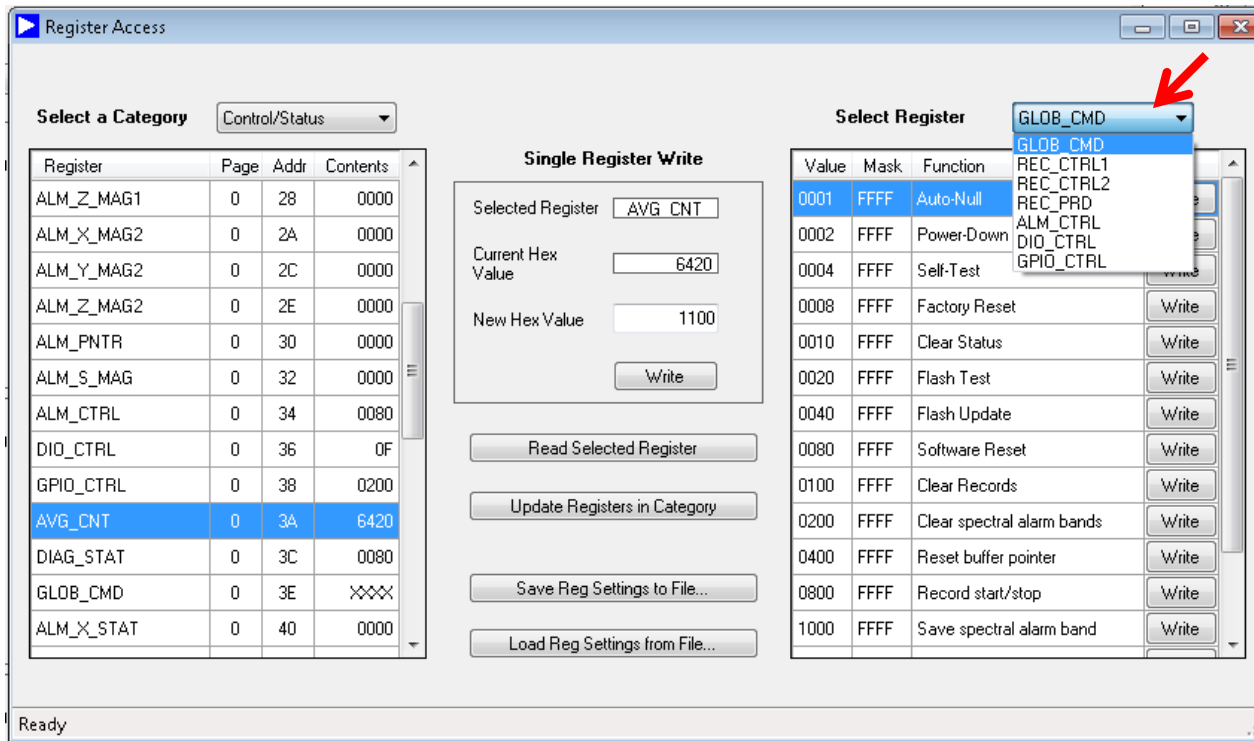
Click on AVG_CNT to observe current sample rate setting for SR0 (and others)

NOTES:

- The present setting (**6420**) for **AVG_CNT** establishes the following sample rates:
  SR0 = 20480 SPS
  SR1 = 5160 SPS
  SR2 = 1280 SPS
  SR3 = 320 SPS
- For the purpose of this tutorial, this does not need to change.

Select "GLOB_CMD" in the drop-down menu located next to "Select Register"

NOTES:

- This function provides simpler access to commonly-used global and configuration commands.
- Selecting the GLOB_CMD register provides single-click access to all of the global commands in the ADIS16228.

Click on "Write" next to the "Flash Update," then exit the Register Access window
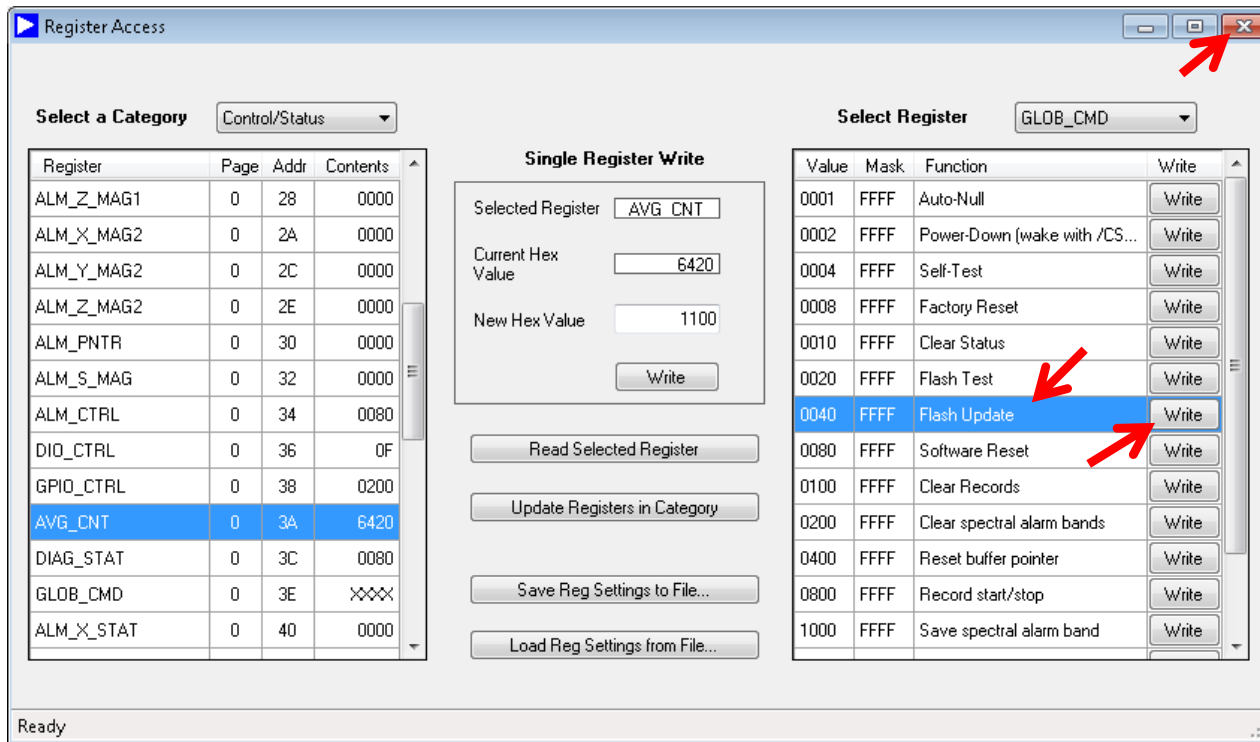
NOTES:

- The **Flash Update**, associated with **GLOB_CMD[6]**, copies user-configuration values to the flash memory location for each register.
- This causes the device to load the new contents when resetting or powering up again.
- Clicking on the **Write** button next to **Flash Update** is equivalent to setting **GLOB_CMD=40** in the **Single Register Write** function

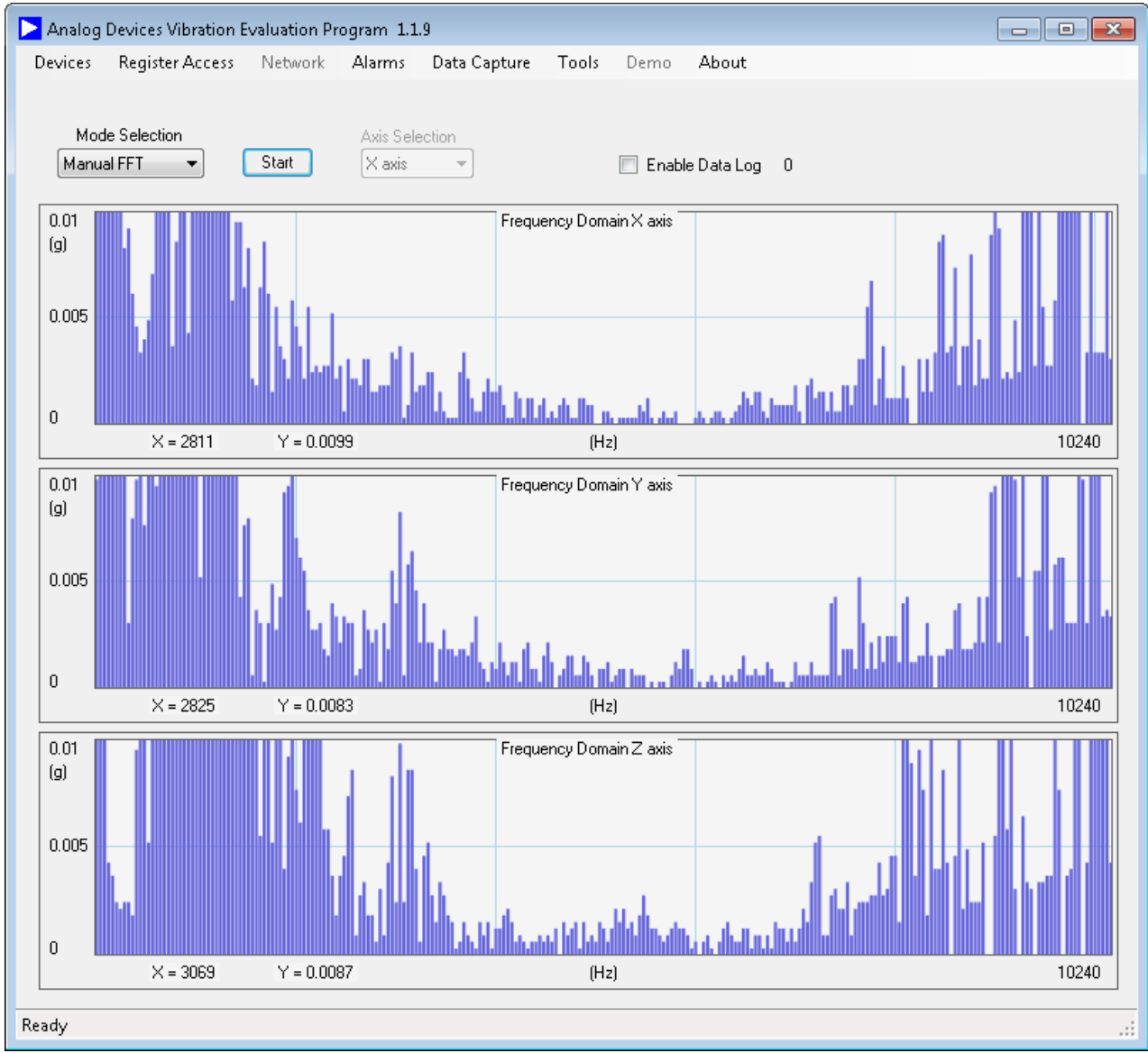# Click on "Start" to initial a data capture, FFT analysis and display of data
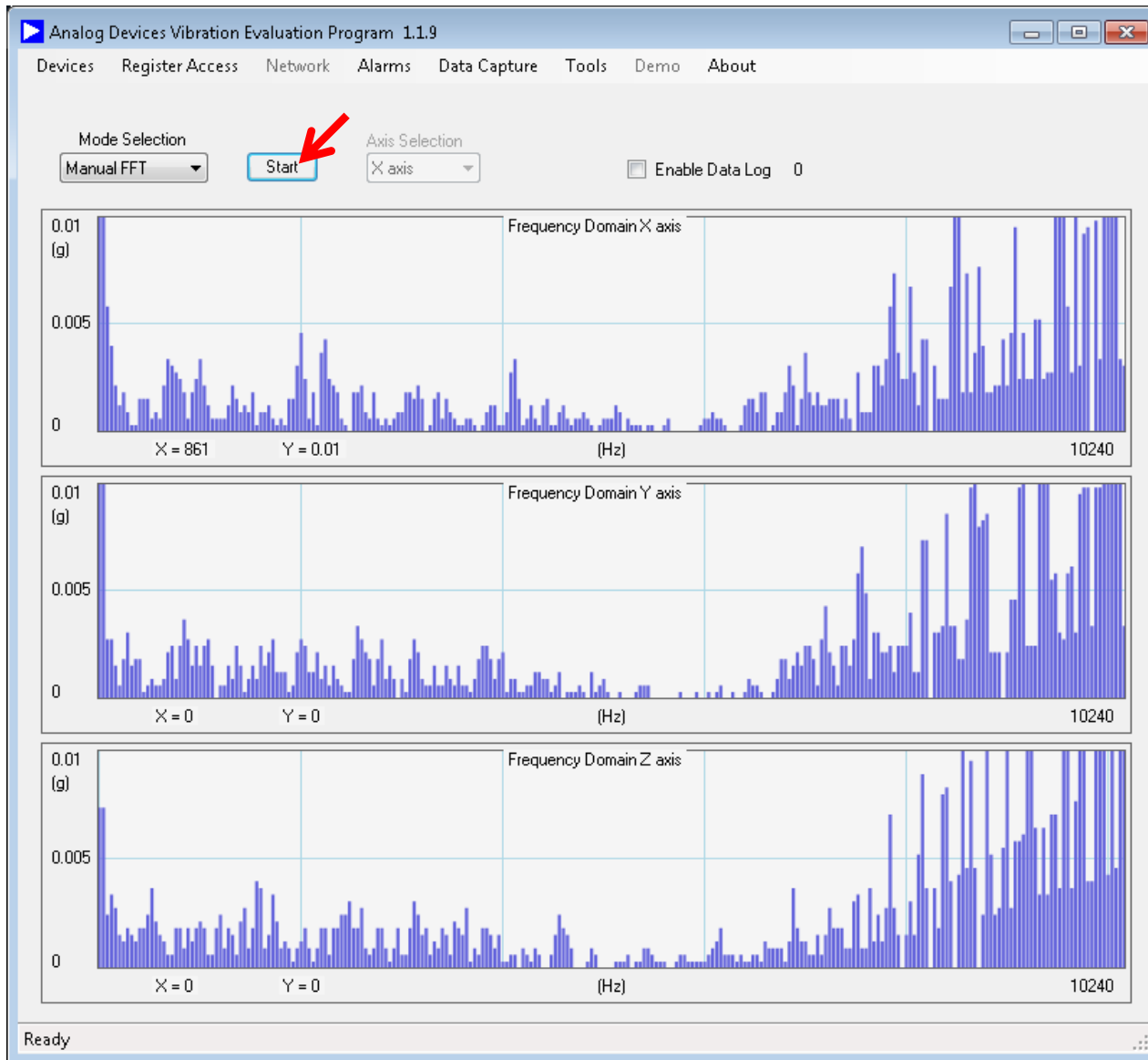
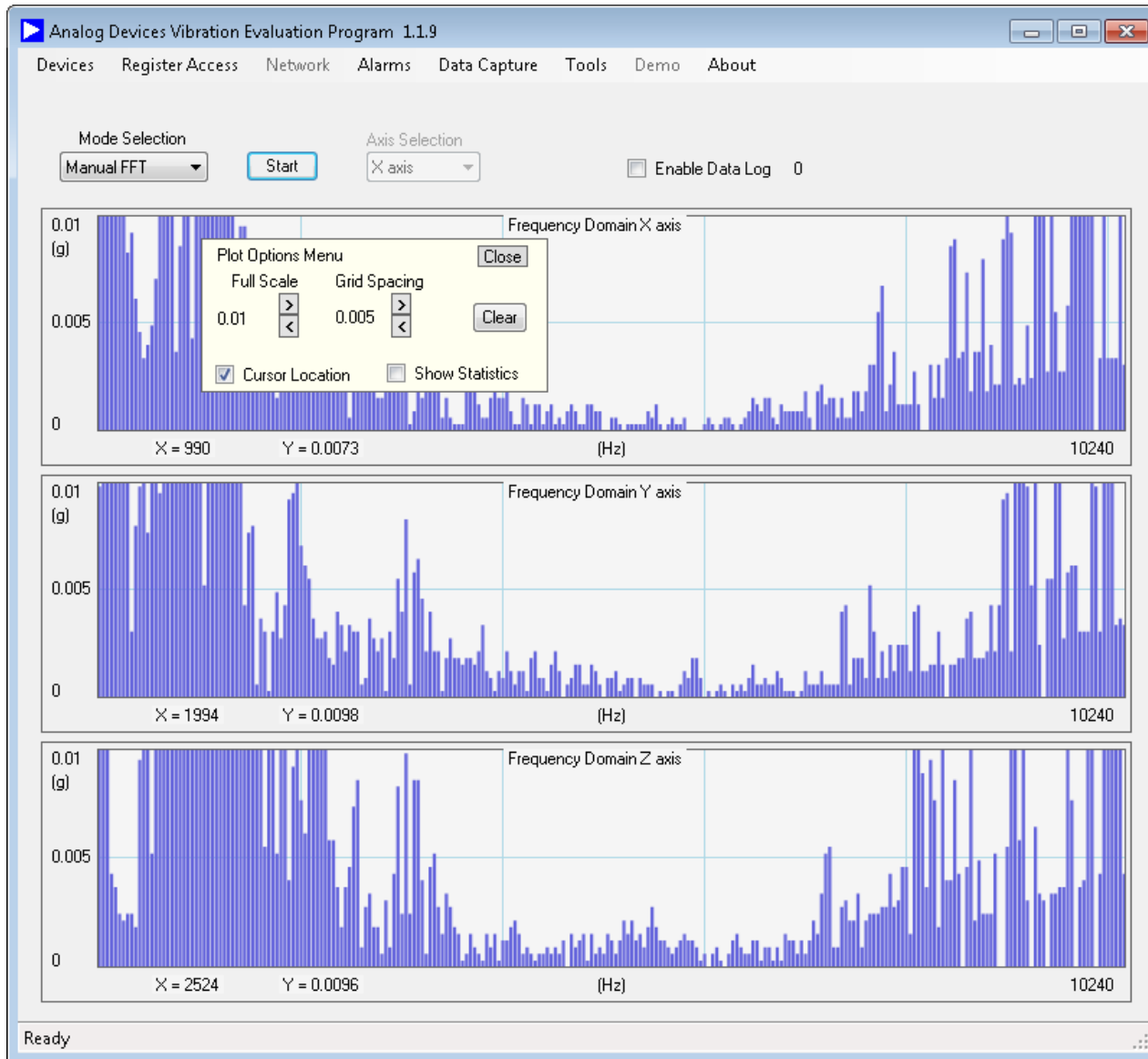
NOTES:

Click on **Start** does the following:

- Set **GLOB_CMD[11] = 1**
- Monitor Busy Signal to track progress.
- Once DIO2 indicates that the data capture and analysis are complete, collect data from buffers (**x_BUF** registers)
- Display data

Sometimes, the vertical scale settings will not suffice
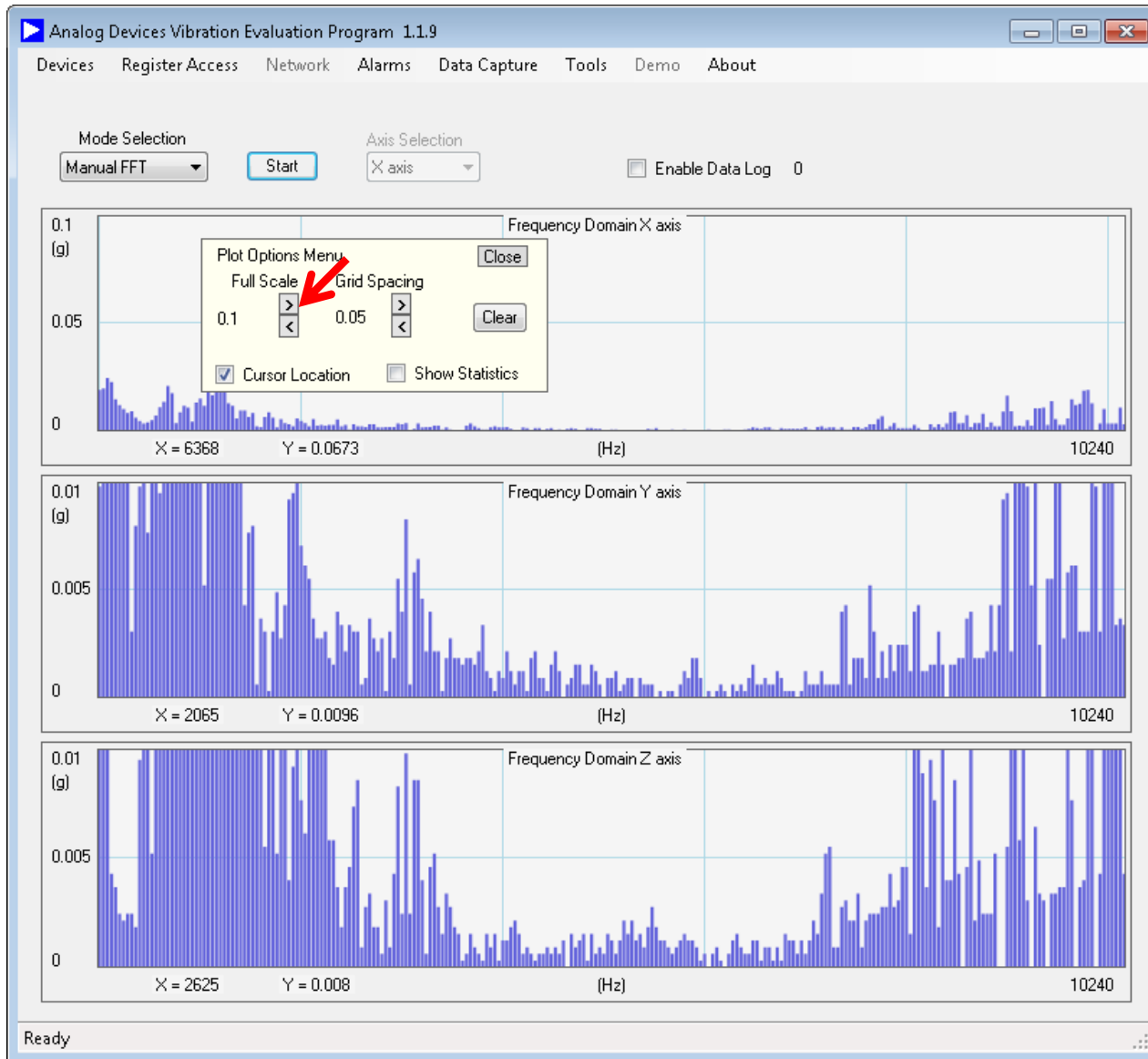

NOTES:

Right click on the waveform to reveal scale setting window

NOTES:

- Click on the arrows to scroll between range and grid spacing settings.

Experiment with the settings

NOTES:

- Note that each axis has independent controls

Thank you!

- ◆ **We sincerely hope that this was helpful.**
- ◆ **Click on "Back" in your web browser to return to the Wiki Guide.**
- ◆ **Good luck in your project!**

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