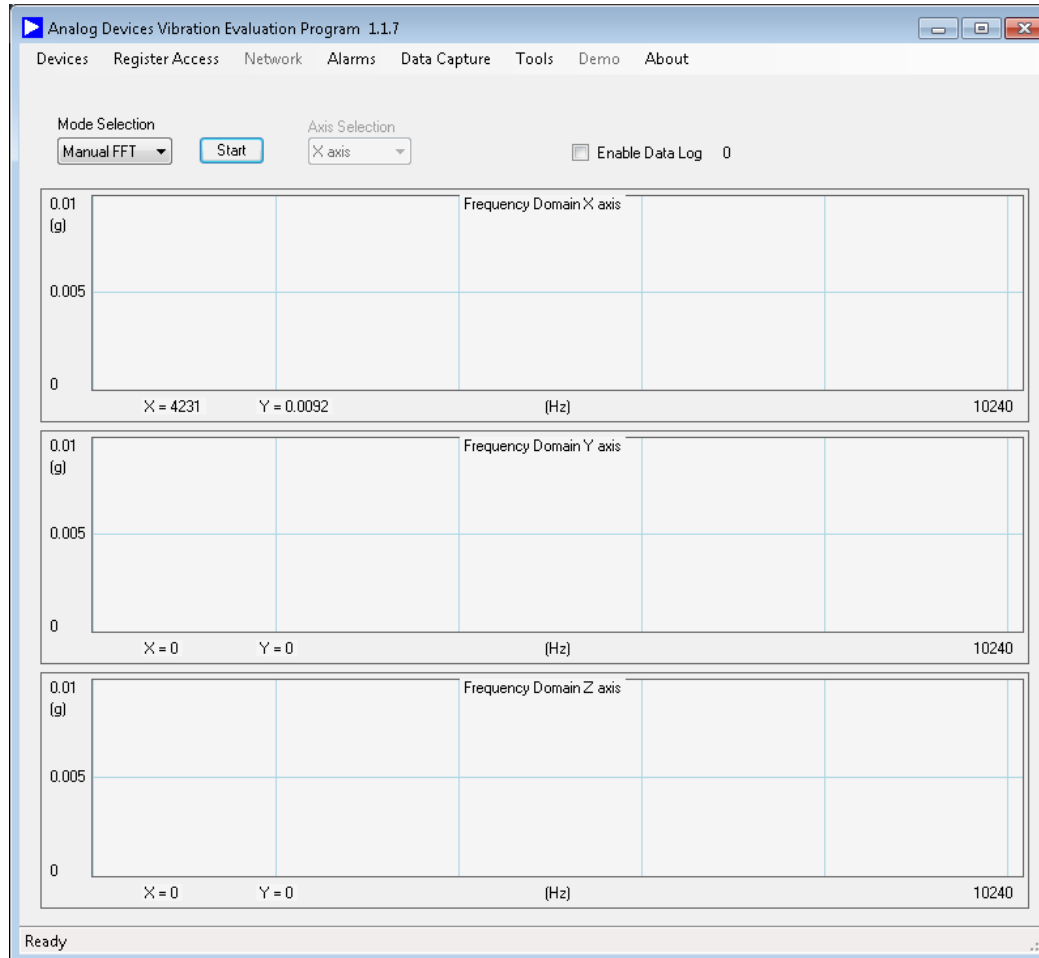


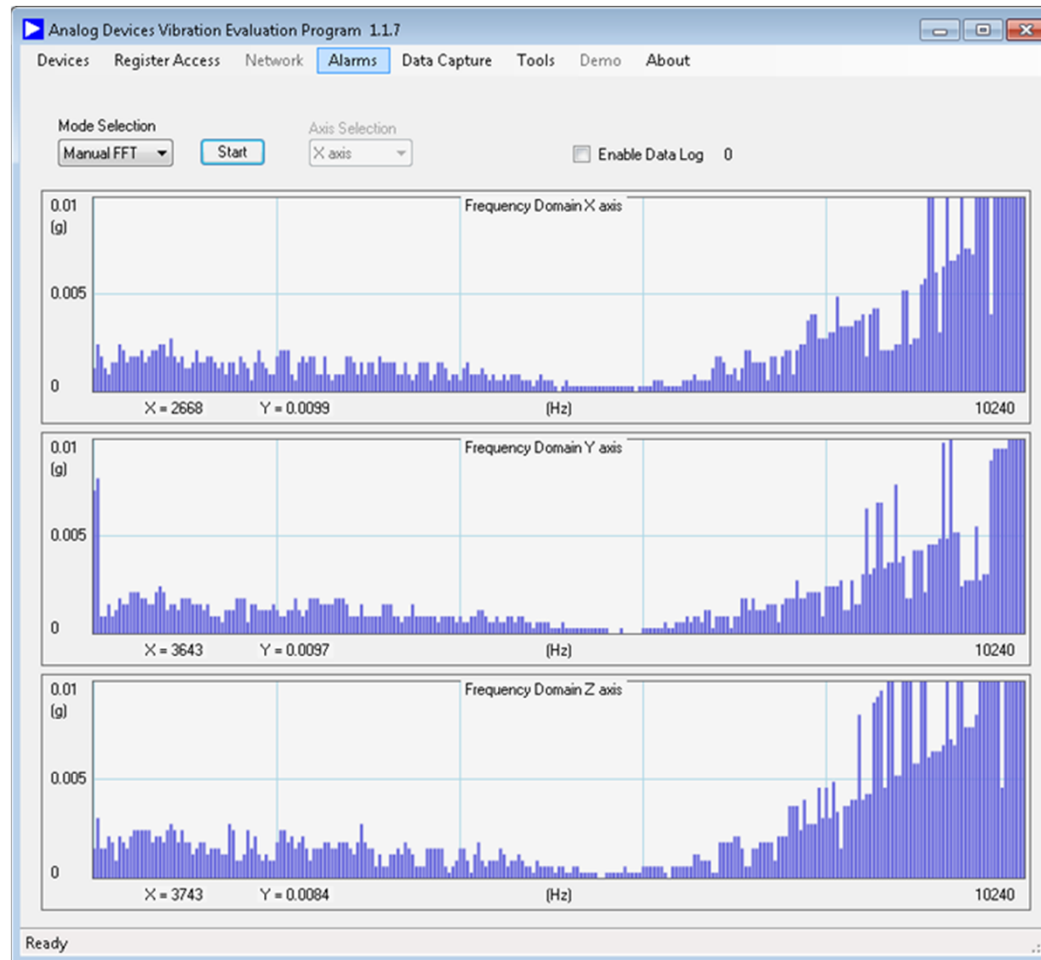
# Problem Report & Resolution Summary

- VEP, v1.1.7
- Device = ADIS16228
- PROBLEM
  - The **Alarm Status Form** does not appear to detect Alarm conditions properly
  - See Following slides for summary of observation
- RESOLUTION
  - The process of observation omitted one critical step: enable alarms
  - See pages 7 – 9 for step-by-step instructions on enabling the alarms.
  - See page 13 for demonstration of expected results

# Step #1 – Start the software



# Step #2 – Press **Start** to run a Manual FFT capture, analysis and waveform update



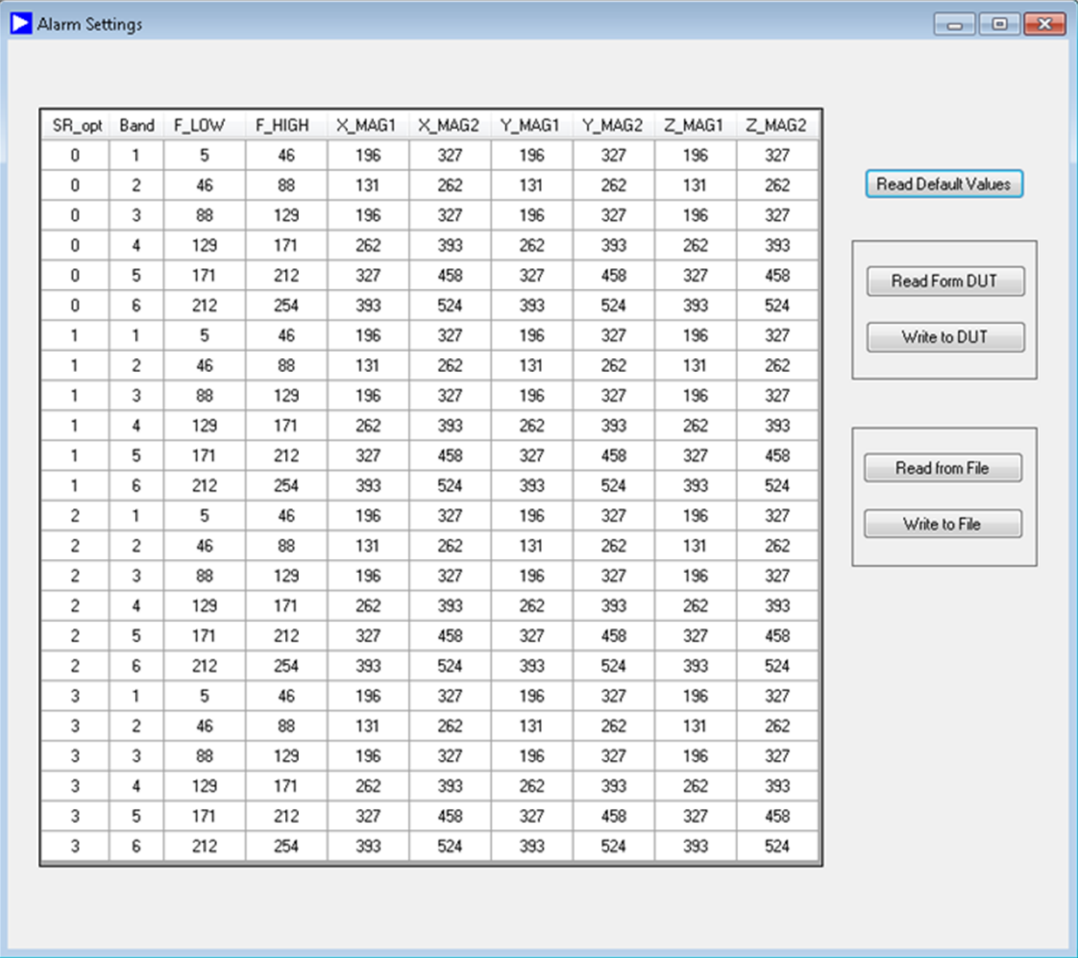


# Step #4 – Press **Read Default Values**

The screenshot shows a software window titled "Alarm Settings". It contains a table with 10 columns: SR\_opt, Band, F\_LOW, F\_HIGH, X\_MAG1, X\_MAG2, Y\_MAG1, Y\_MAG2, Z\_MAG1, and Z\_MAG2. The table lists 24 rows of data. To the right of the table are two groups of buttons. The first group includes a blue "Read Default Values" button, and two grey buttons "Read Form DUT" and "Write to DUT". The second group includes two grey buttons "Read from File" and "Write to File".

SR_opt	Band	F_LOW	F_HIGH	X_MAG1	X_MAG2	Y_MAG1	Y_MAG2	Z_MAG1	Z_MAG2
0	1	5	46	196	327	196	327	196	327
0	2	46	88	131	262	131	262	131	262
0	3	88	129	196	327	196	327	196	327
0	4	129	171	262	393	262	393	262	393
0	5	171	212	327	458	327	458	327	458
0	6	212	254	393	524	393	524	393	524
1	1	5	46	196	327	196	327	196	327
1	2	46	88	131	262	131	262	131	262
1	3	88	129	196	327	196	327	196	327
1	4	129	171	262	393	262	393	262	393
1	5	171	212	327	458	327	458	327	458
1	6	212	254	393	524	393	524	393	524
2	1	5	46	196	327	196	327	196	327
2	2	46	88	131	262	131	262	131	262
2	3	88	129	196	327	196	327	196	327
2	4	129	171	262	393	262	393	262	393
2	5	171	212	327	458	327	458	327	458
2	6	212	254	393	524	393	524	393	524
3	1	5	46	196	327	196	327	196	327
3	2	46	88	131	262	131	262	131	262
3	3	88	129	196	327	196	327	196	327
3	4	129	171	262	393	262	393	262	393
3	5	171	212	327	458	327	458	327	458
3	6	212	254	393	524	393	524	393	524

# Step #5 – Press **Write to DUT**, then exit **Alarm Settings**



The screenshot shows a window titled "Alarm Settings" with a table of parameters and several control buttons. The table has 10 columns: SR\_opt, Band, F\_LOW, F\_HIGH, X\_MAG1, X\_MAG2, Y\_MAG1, Y\_MAG2, Z\_MAG1, and Z\_MAG2. The data is organized into groups based on SR\_opt values (0, 1, 2, 3) and Band values (1-6). The control buttons are: "Read Default Values" (highlighted in blue), "Read Form DUT", "Write to DUT", "Read from File", and "Write to File".

SR_opt	Band	F_LOW	F_HIGH	X_MAG1	X_MAG2	Y_MAG1	Y_MAG2	Z_MAG1	Z_MAG2
0	1	5	46	196	327	196	327	196	327
0	2	46	88	131	262	131	262	131	262
0	3	88	129	196	327	196	327	196	327
0	4	129	171	262	393	262	393	262	393
0	5	171	212	327	458	327	458	327	458
0	6	212	254	393	524	393	524	393	524
1	1	5	46	196	327	196	327	196	327
1	2	46	88	131	262	131	262	131	262
1	3	88	129	196	327	196	327	196	327
1	4	129	171	262	393	262	393	262	393
1	5	171	212	327	458	327	458	327	458
1	6	212	254	393	524	393	524	393	524
2	1	5	46	196	327	196	327	196	327
2	2	46	88	131	262	131	262	131	262
2	3	88	129	196	327	196	327	196	327
2	4	129	171	262	393	262	393	262	393
2	5	171	212	327	458	327	458	327	458
2	6	212	254	393	524	393	524	393	524
3	1	5	46	196	327	196	327	196	327
3	2	46	88	131	262	131	262	131	262
3	3	88	129	196	327	196	327	196	327
3	4	129	171	262	393	262	393	262	393
3	5	171	212	327	458	327	458	327	458
3	6	212	254	393	524	393	524	393	524

# Step #6 – Press Register Access from the Main Screen

The screenshot shows the 'Register Access' application window. It features a 'Select a Category' dropdown set to 'Control/Status' and a 'Select Register' dropdown set to 'COMMAND'. The main interface is divided into three sections:

- Register List:** A table listing various registers with their page, address, and current contents.
- Single Register Write:** A configuration panel for writing to a specific register. The 'Selected Register' is 'TEMP\_OUT', the 'Current Hex Value' is '8000', and the 'New Hex Value' is '80'. A 'Write' button is present at the bottom of this panel.
- Register Details:** A table showing details for the selected register (0001), including its mask (FFFF) and function (Auto-Null). A 'Write' button is next to each row.

At the bottom of the window, there are buttons for 'Read Selected Register', 'Update Registers in Category', 'Save Reg Settings to File...', and 'Load Reg Settings from File...'. The status bar at the bottom left shows 'Ready'.

Register	Page	Addr	Contents
TEMP_OUT	0	08	8000
SUPPLY_OUT	0	0A	8000
FFT_AVG1	0	0C	0F0F
FFT_AVG2	0	0E	0F0F
BUF_PNTR	0	10	0000
REC_PNTR	0	12	0000
Y_BUF	0	16	8000
Z_BUF	0	18	8000
REC_CTRL1	0	1A	1F00
REC_CTRL2	0	1C	00FF
REC_PRD	0	1E	0005
ALM_F_LOW	0	20	00D4
ALM_F_HIGH	0	22	00FE

Value	Mask	Function	Write
0001	FFFF	Auto-Null	Write
0002	FFFF	Power-Down (wake with /CS...	Write
0004	FFFF	Self-Test	Write
0008	FFFF	Factory Reset	Write
0010	FFFF	Clear Status	Write
0020	FFFF	Flash Test	Write
0040	FFFF	Flash Update	Write
0080	FFFF	Software Reset	Write
0100	FFFF	Clear Records	Write
0200	FFFF	Clear spectral alarm bands	Write
0400	FFFF	Reset buffer pointer	Write
0800	FFFF	Record start/stop	Write
1000	FFFF	Save spectral alarm band	Write

# Step #7 – Scroll down and find **ALM\_CTRL**

The screenshot shows the 'Register Access' software interface. The 'Select a Category' dropdown is set to 'Control/Status'. The 'Select Register' dropdown is set to 'COMMAND'. The 'Single Register Write' section shows the 'Selected Register' as 'ALM\_CTRL', with a 'Current Hex Value' of '0080' and a 'New Hex Value' of '80'. The 'Write' button is visible. The 'Read Selected Register' button is also visible. The 'Update Registers in Category' button is visible. The 'Save Reg Settings to File...' button is visible. The 'Load Reg Settings from File...' button is visible. The 'Register' table on the left lists various registers, with 'ALM\_CTRL' highlighted. The 'Value' table on the right lists various values, with '0001' highlighted.

Register	Page	Addr	Contents
ALM_X_MAG1	0	24	0189
ALM_Y_MAG1	0	26	0189
ALM_Z_MAG1	0	28	0189
ALM_X_MAG2	0	2A	020C
ALM_Y_MAG2	0	2C	020C
ALM_Z_MAG2	0	2E	020C
ALM_PNTR	0	30	0306
ALM_S_MAG	0	32	0000
<b>ALM_CTRL</b>	<b>0</b>	<b>34</b>	<b>0080</b>
DIO_CTRL	0	36	0F
GPIO_CTRL	0	38	0200
AVG_CNT	0	3A	6420
STATUS	0	3C	0080

Value	Mask	Function	Write
<b>0001</b>	<b>FFFF</b>	<b>Auto-Null</b>	<b>Write</b>
0002	FFFF	Power-Down (wake with /CS...	Write
0004	FFFF	Self-Test	Write
0008	FFFF	Factory Reset	Write
0010	FFFF	Clear Status	Write
0020	FFFF	Flash Test	Write
0040	FFFF	Flash Update	Write
0080	FFFF	Software Reset	Write
0100	FFFF	Clear Records	Write
0200	FFFF	Clear spectral alarm bands	Write
0400	FFFF	Reset buffer pointer	Write
0800	FFFF	Record start/stop	Write
1000	FFFF	Save spectral alarm band	Write

Ready



# Step #8 – Set **ALM\_CTRL**[2:0] = 111

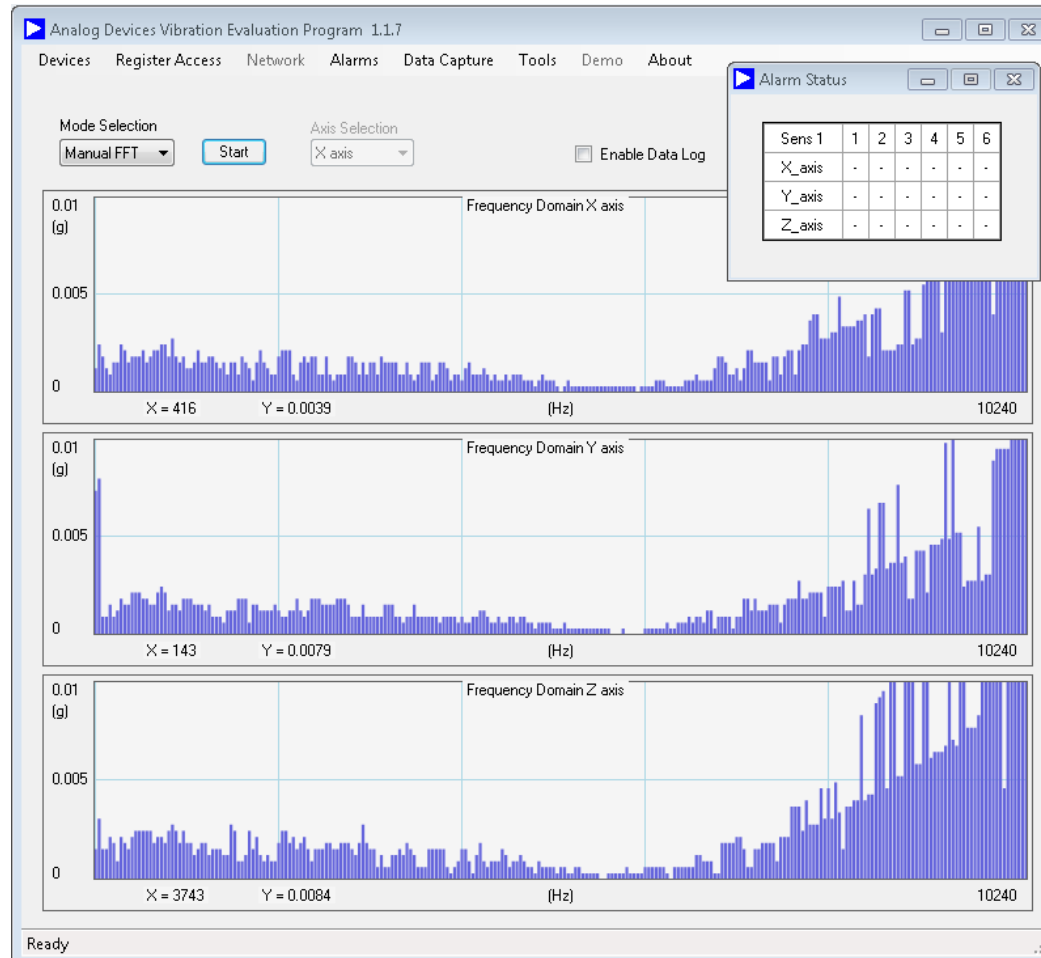
## Set New Hex Value to 87, then press **Write**

The screenshot shows the 'Register Access' software interface. The 'Select a Category' dropdown is set to 'Control/Status'. The 'Select Register' dropdown is set to 'COMMAND'. The 'Single Register Write' section shows the 'Selected Register' as 'ALM\_CTRL', the 'Current Hex Value' as '0080', and the 'New Hex Value' as '87'. The 'Write' button is highlighted. The 'Register' table on the left shows 'ALM\_CTRL' at address 34 with content 0080. The 'Value' table on the right shows the 'Auto-Null' function at value 0001.

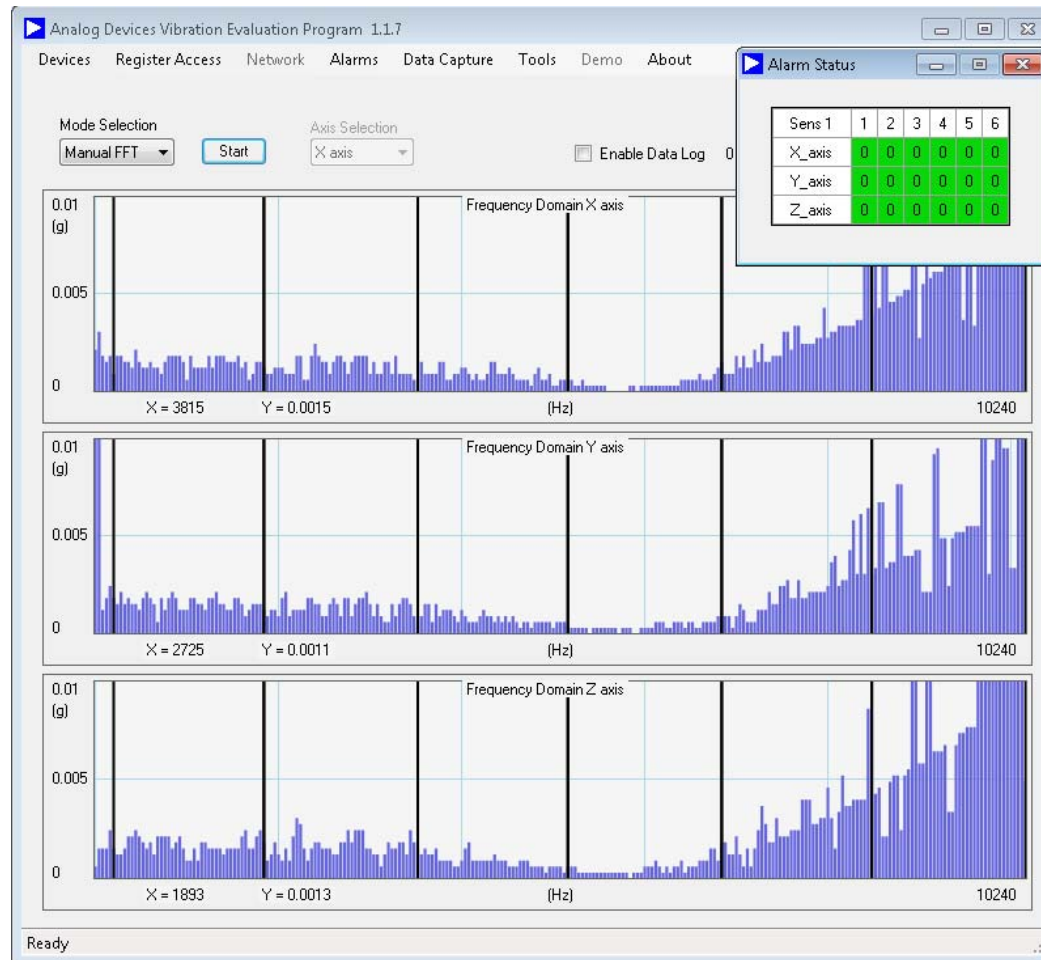
Register	Page	Addr	Contents
ALM_X_MAG1	0	24	0189
ALM_Y_MAG1	0	26	0189
ALM_Z_MAG1	0	28	0189
ALM_X_MAG2	0	2A	020C
ALM_Y_MAG2	0	2C	020C
ALM_Z_MAG2	0	2E	020C
ALM_PNTR	0	30	0306
ALM_S_MAG	0	32	0000
<b>ALM_CTRL</b>	<b>0</b>	<b>34</b>	<b>0080</b>
DIO_CTRL	0	36	0F
GPIO_CTRL	0	38	0200
AVG_CNT	0	3A	6420
STATUS	0	3C	0080

Value	Mask	Function	Write
0001	FFFF	Auto-Null	Write
0002	FFFF	Power-Down (wake with /CS...	Write
0004	FFFF	Self-Test	Write
0008	FFFF	Factory Reset	Write
0010	FFFF	Clear Status	Write
0020	FFFF	Flash Test	Write
0040	FFFF	Flash Update	Write
0080	FFFF	Software Reset	Write
0100	FFFF	Clear Records	Write
0200	FFFF	Clear spectral alarm bands	Write
0400	FFFF	Reset buffer pointer	Write
0800	FFFF	Record start/stop	Write
1000	FFFF	Save spectral alarm band	Write

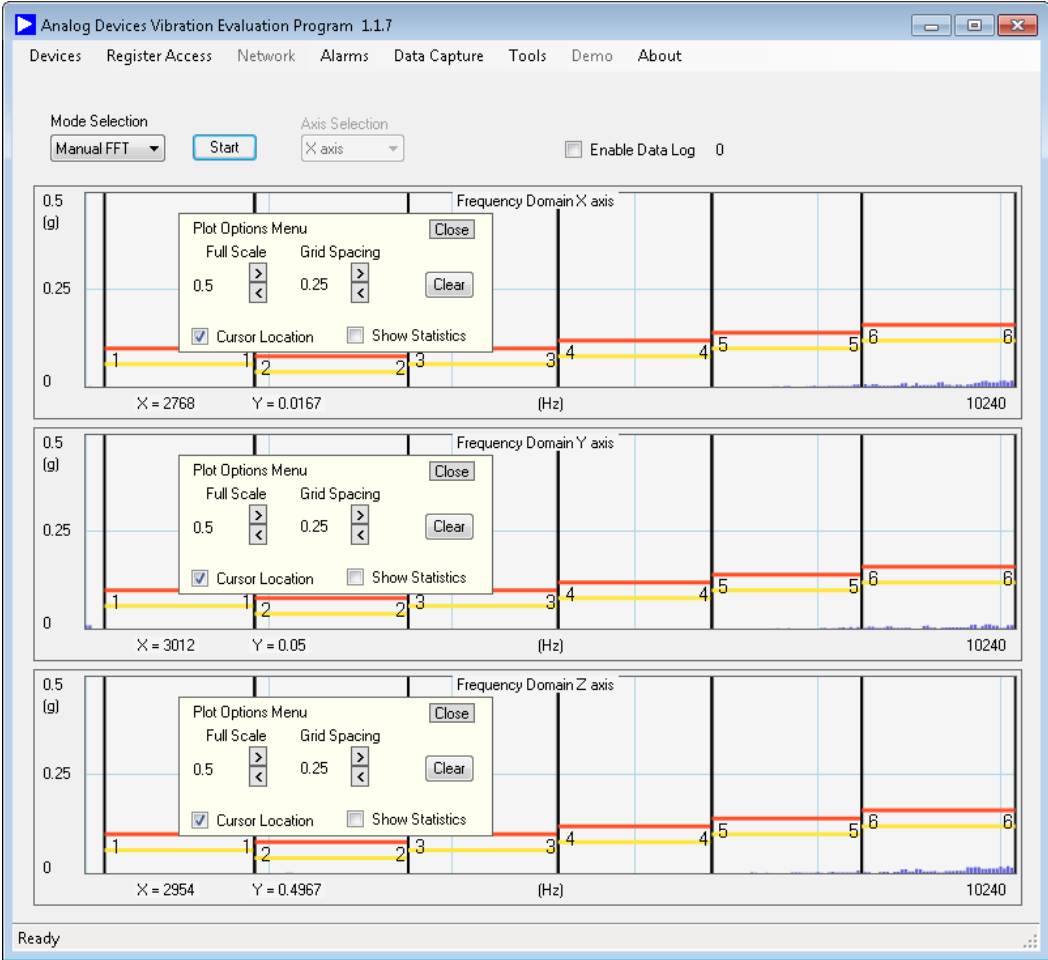
# Step #9 – Exit Register Access Window, then Press Alarms > Alarm Status Form



# Step #10 – Press > **Start** to run a Manual FFT



# Step #11 – Change vertical scale in **Waveform displays**



# Step #12 – While shaking device, press > **Start** to run another **Manual FFT**

