

# Statistical Band Alarm Wizard

SKF @ptitude Analyst v8.1.6.0 (8.0 MR1)

Cal Williams

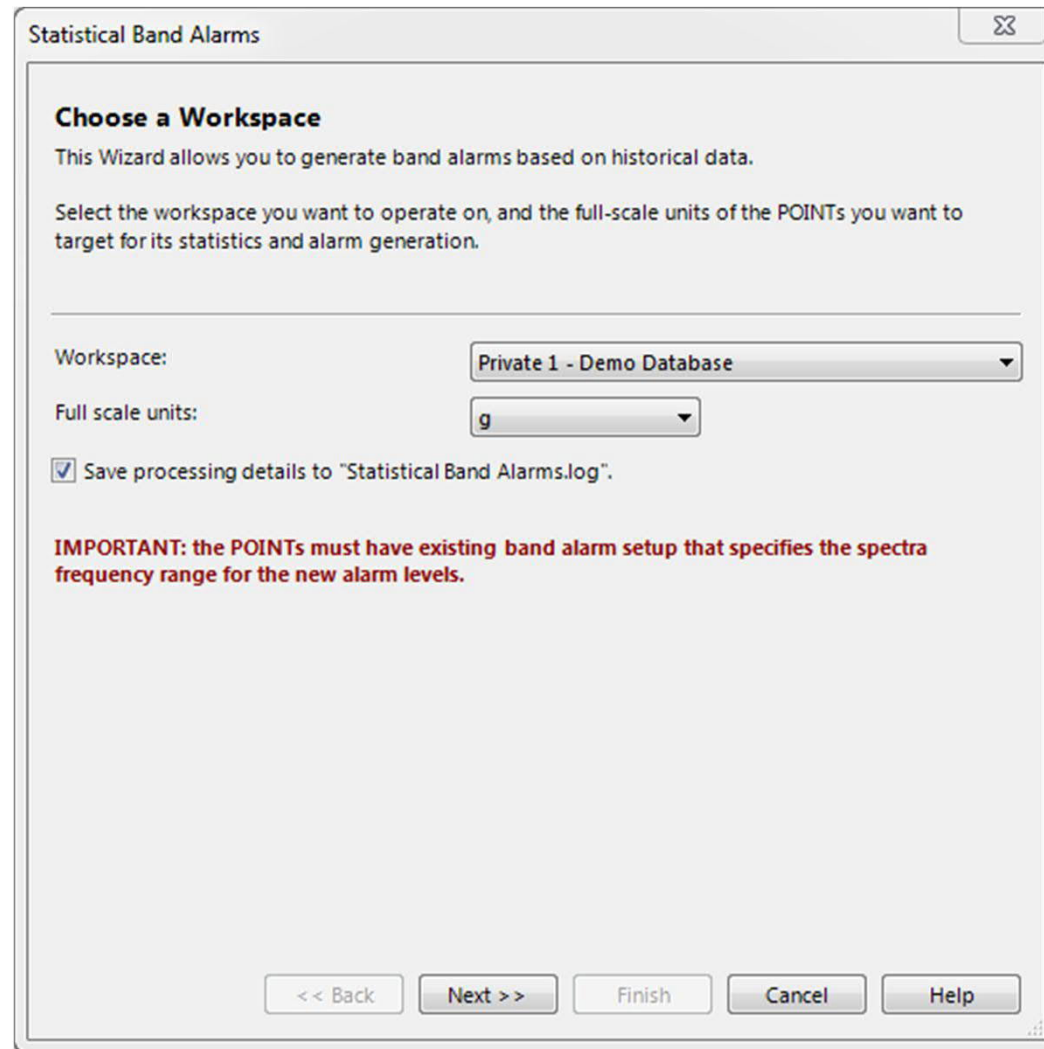
# Overview

- What does the Statistical Band Alarm (SBA) Wizard?
  - To calculate band alarm levels based on the standard deviation \* a user defined factor

# SBA Requirements

- To use the Requirements
  - Points with FFT data
  - Existing band alarms that define the frequency ranges to operate on. Alarm values are ignored.
  - Workspace defines the points to operate on

# Choose a Workspace



Statistical Band Alarms

**Choose a Workspace**

This Wizard allows you to generate band alarms based on historical data.

Select the workspace you want to operate on, and the full-scale units of the POINTs you want to target for its statistics and alarm generation.

Workspace: Private 1 - Demo Database

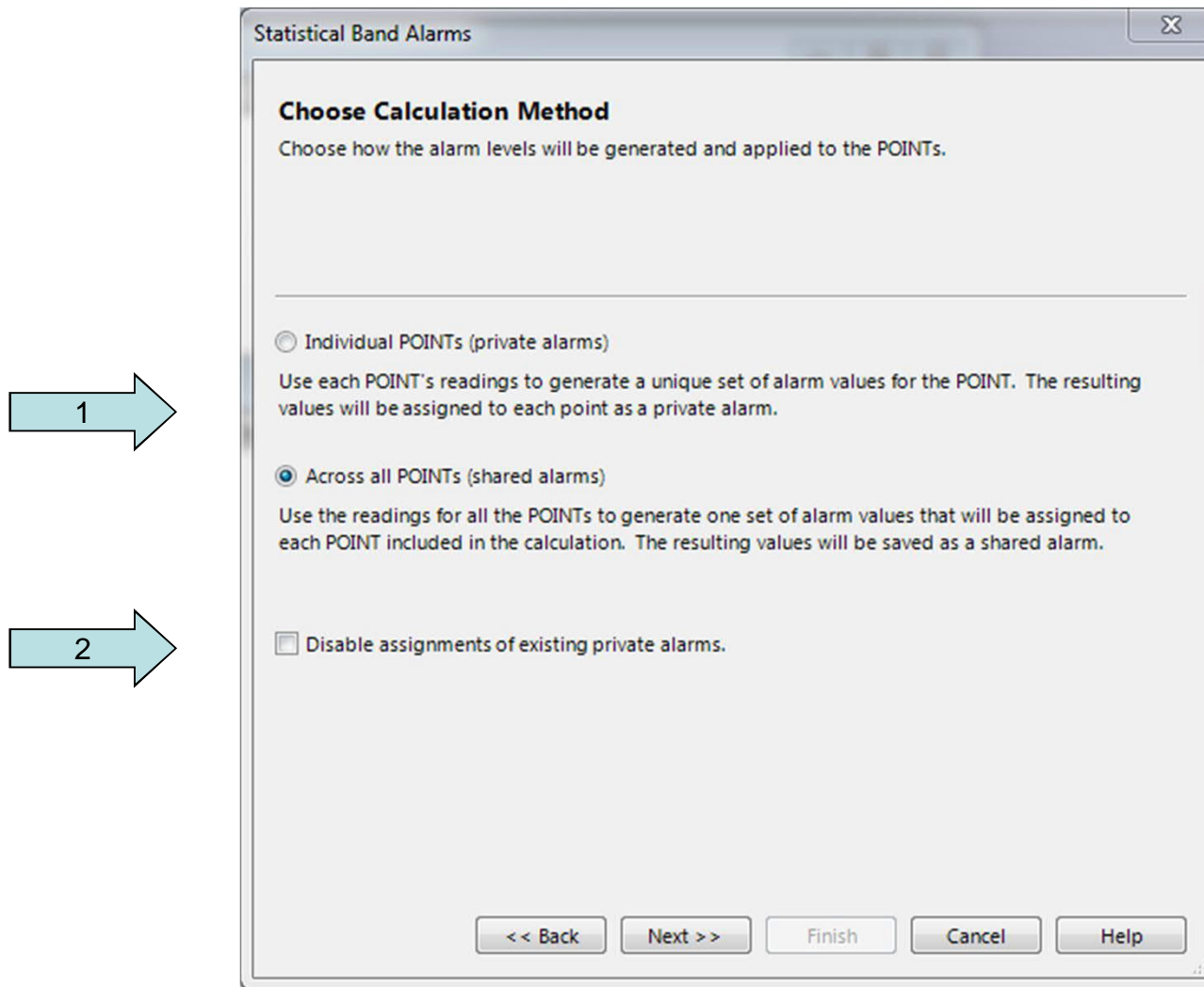
Full scale units: g

☒ Save processing details to "Statistical Band Alarms.log".

**IMPORTANT:** the POINTs must have existing band alarm setup that specifies the spectra frequency range for the new alarm levels.

<< Back Next >> Finish Cancel Help

# Choose Calculation Method



Statistical Band Alarms

**Choose Calculation Method**  
Choose how the alarm levels will be generated and applied to the POINTs.

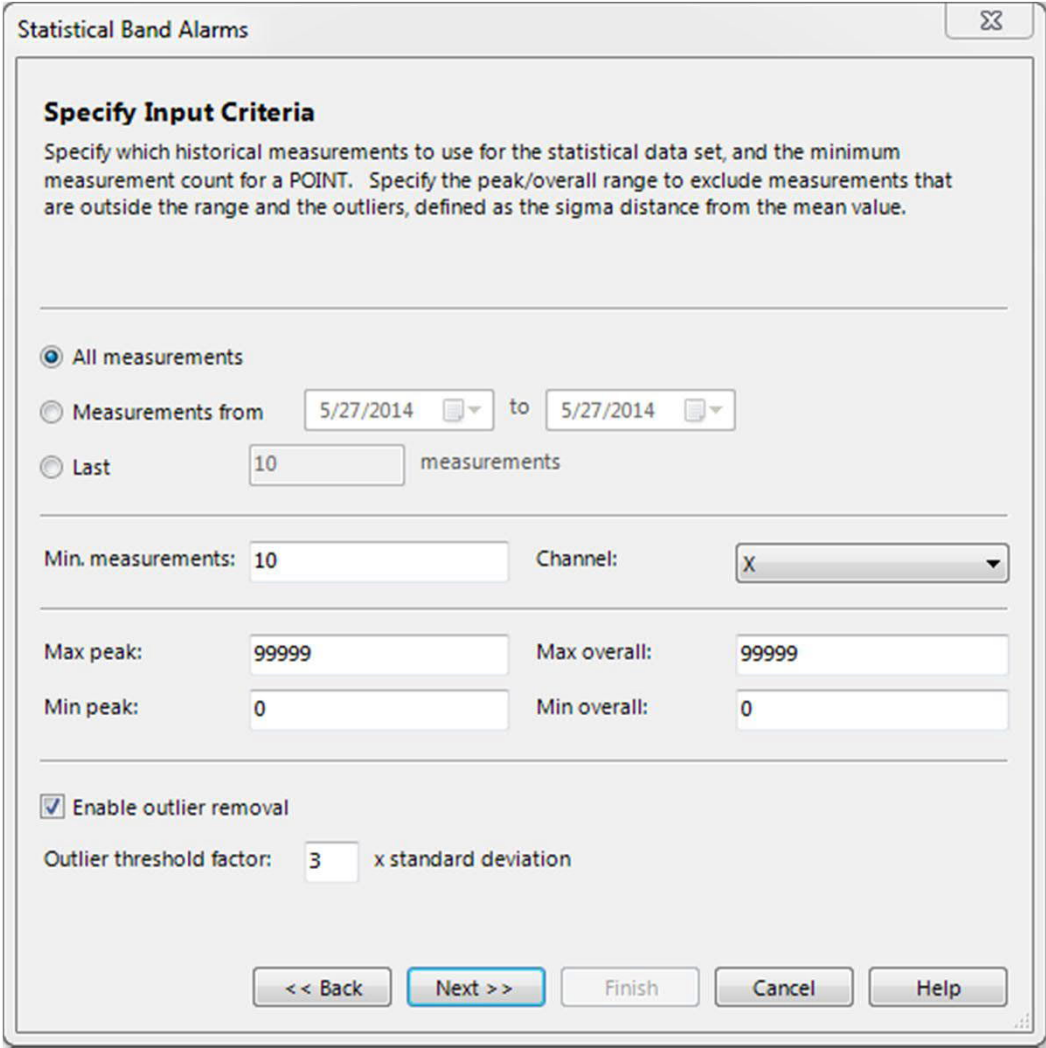
☐ Individual POINTs (private alarms)  
Use each POINT's readings to generate a unique set of alarm values for the POINT. The resulting values will be assigned to each point as a private alarm.

☒ Across all POINTs (shared alarms)  
Use the readings for all the POINTs to generate one set of alarm values that will be assigned to each POINT included in the calculation. The resulting values will be saved as a shared alarm.

☐ Disable assignments of existing private alarms.

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# Specify Input Criteria



**Statistical Band Alarms**

**Specify Input Criteria**

Specify which historical measurements to use for the statistical data set, and the minimum measurement count for a POINT. Specify the peak/overall range to exclude measurements that are outside the range and the outliers, defined as the sigma distance from the mean value.

1 ☒ All measurements

2 ☐ Measurements from 5/27/2014 to 5/27/2014

3 ☐ Last 10 measurements

Min. measurements: 10 Channel: X

Max peak: 99999 Max overall: 99999

Min peak: 0 Min overall: 0

☒ Enable outlier removal

Outlier threshold factor: 3 x standard deviation

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# Set Alarm Level Factors

Statistical Band Alarms

**Set Alarm Level Factors**

Enter the factor for each alarm level in the standard deviation factors. Alarm levels are calculated using the equation  $\text{Value} = \text{Mean} + (n * \text{Standard Deviation})$  where n represents the factor for the level being calculated.

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Peak danger:  x standard deviation

Peak alert:  x standard deviation

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Overall danger:  x standard deviation

Overall alert:  x standard deviation

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# Set Alarm Level Limits

Statistical Band Alarms

### Set Alarm Level Limits

You can guard against unacceptably narrow statistically derived alarm levels by setting minimum and maximum alarm level ranges. These alarm ranges may be entered as an absolute value, as an offset relative to the calculated mean (offset+), or as a percentage factor to be multiplied by the mean (factor%).

Minimum levels

☐ Peak danger:

0

☐ Overall danger:

0

☐ Peak alert:

0

☐ Overall alert:

0

Maximum levels

☐ Peak danger:

99999

☐ Overall danger:

99999

☐ Peak alert:

99999

☐ Overall alert:

99999

< < Back

Next >>

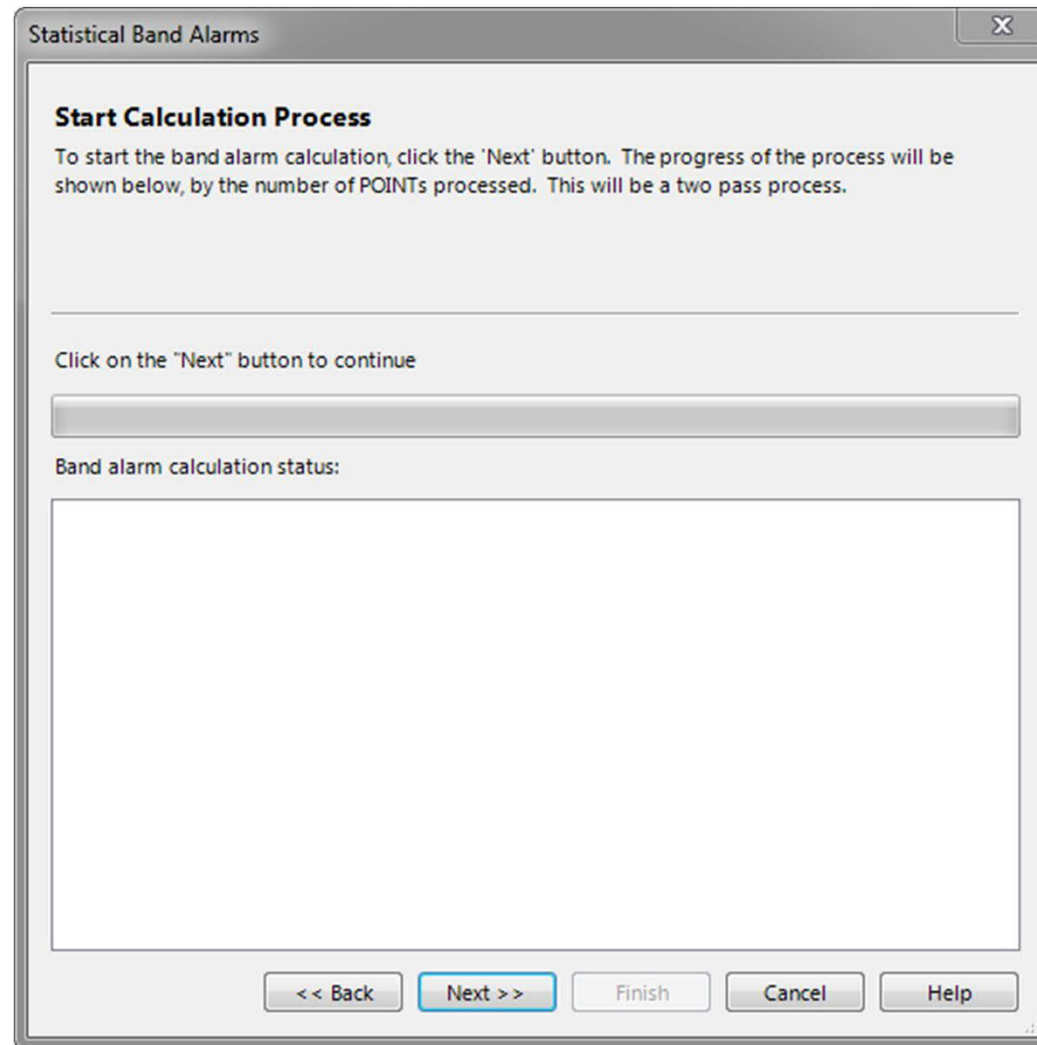
Finish

Cancel

Help



# Start Calculation Process



Statistical Band Alarms

**Start Calculation Process**

To start the band alarm calculation, click the 'Next' button. The progress of the process will be shown below, by the number of POINTs processed. This will be a two pass process.

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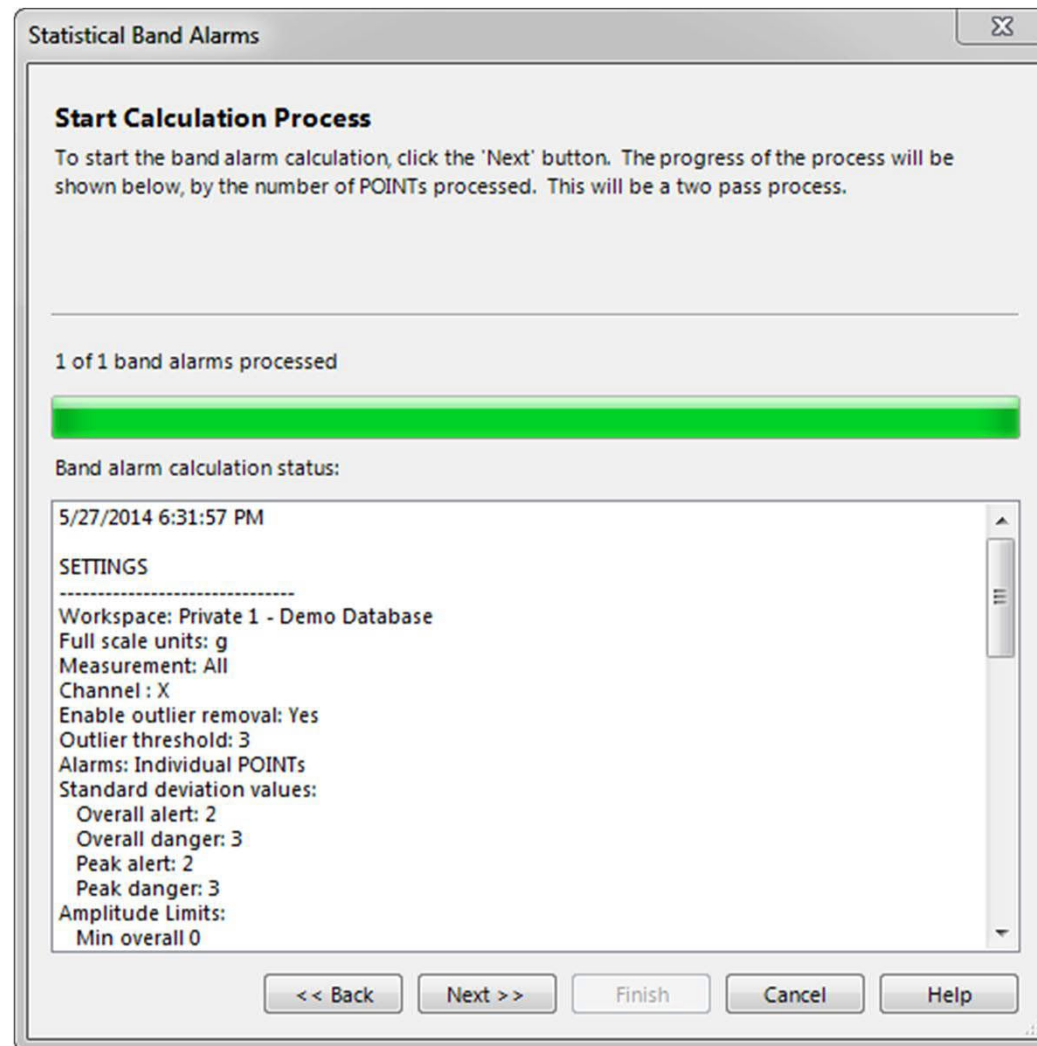
Click on the "Next" button to continue

Band alarm calculation status:

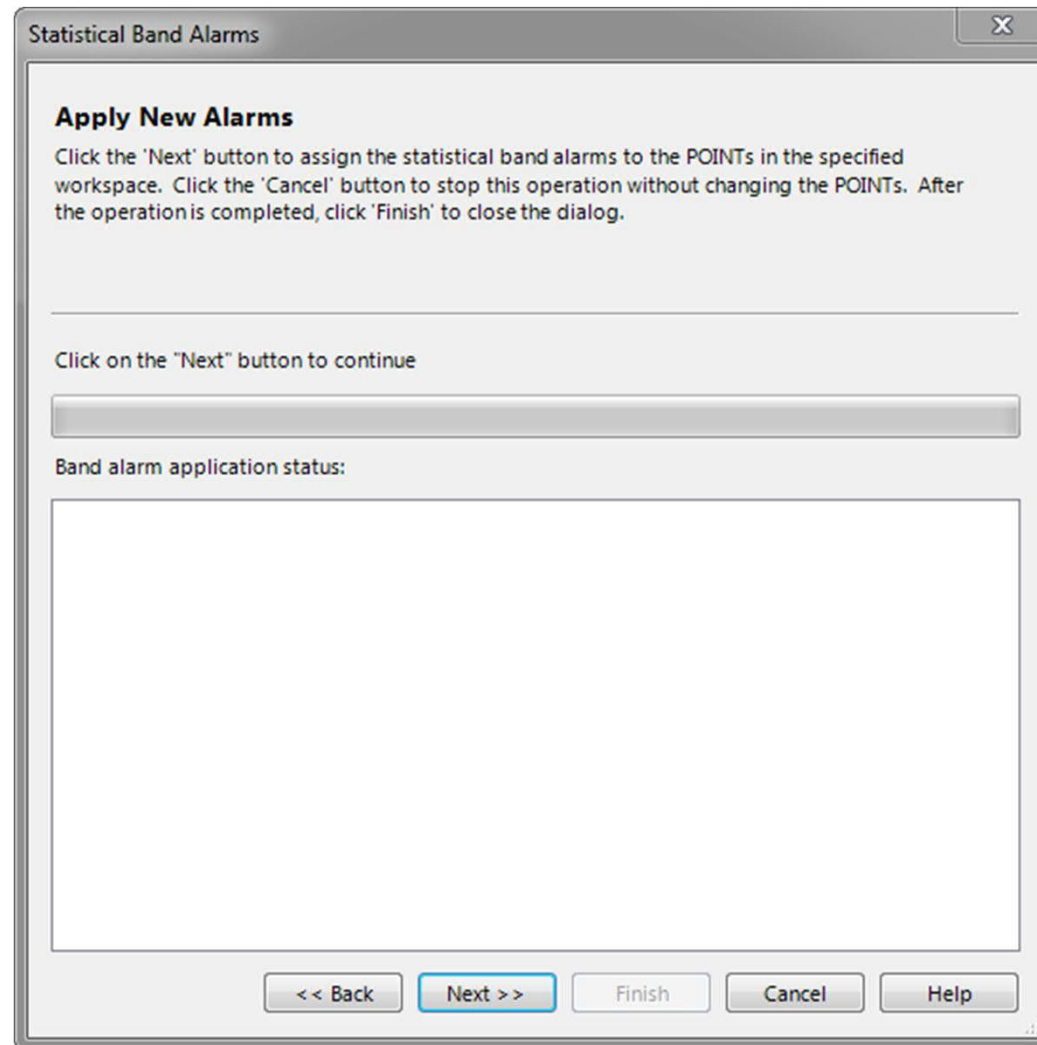
<< Back   Next >>   Finish   Cancel   Help

The image shows a software dialog box titled "Statistical Band Alarms". It contains instructions to click the "Next" button to start a two-pass calculation process. A progress bar is present but empty. At the bottom, there are five buttons: "<< Back", "Next >>" (highlighted with a blue border), "Finish", "Cancel", and "Help".

# Run Calculation Pass



# Apply New Alarms



Statistical Band Alarms

**Apply New Alarms**

Click the 'Next' button to assign the statistical band alarms to the POINTs in the specified workspace. Click the 'Cancel' button to stop this operation without changing the POINTs. After the operation is completed, click 'Finish' to close the dialog.

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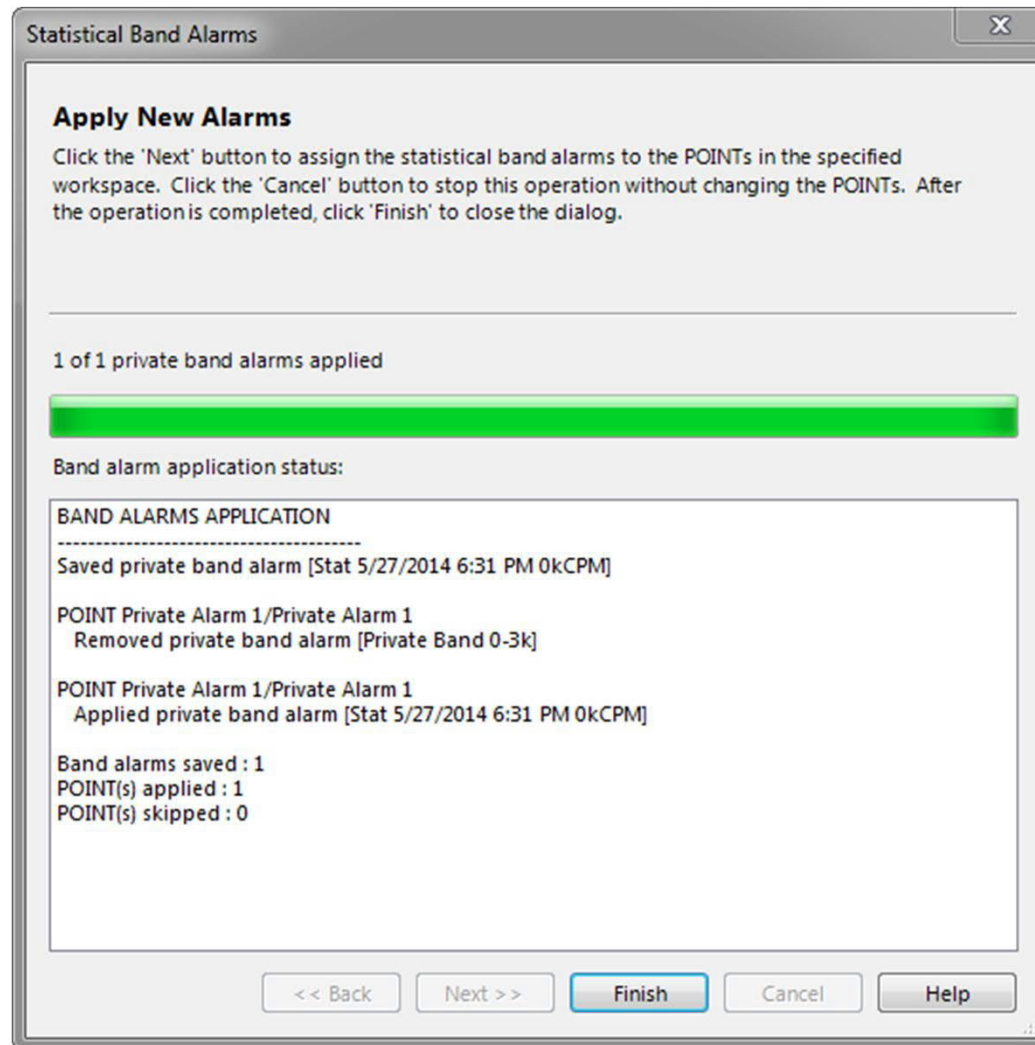
Click on the "Next" button to continue

Band alarm application status:

<< Back   **Next >>**   Finish   Cancel   Help

The dialog box is titled "Statistical Band Alarms" and features a close button (X) in the top right corner. The main content area is divided into sections. The first section, titled "Apply New Alarms", contains a paragraph of instructions: "Click the 'Next' button to assign the statistical band alarms to the POINTs in the specified workspace. Click the 'Cancel' button to stop this operation without changing the POINTs. After the operation is completed, click 'Finish' to close the dialog." This is followed by a horizontal line and the text "Click on the 'Next' button to continue". Below this is a wide, empty rectangular box. The final section is labeled "Band alarm application status:" and contains a large, empty rectangular box. At the bottom of the dialog, there is a row of five buttons: "<< Back", "Next >>" (which is highlighted with a blue border), "Finish", "Cancel", and "Help".

# Set Alarm Levels



# The End

- Questions?