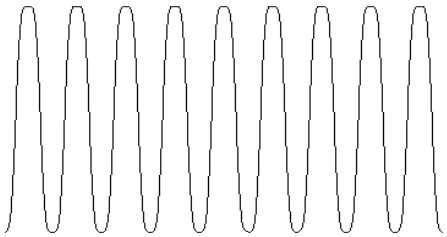
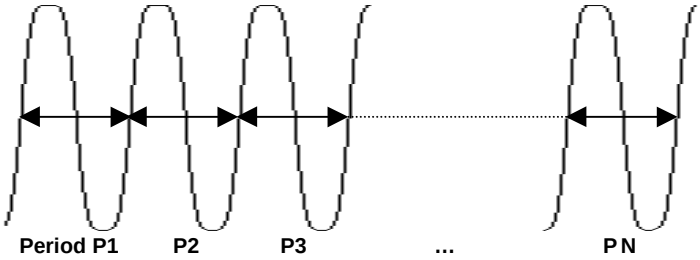
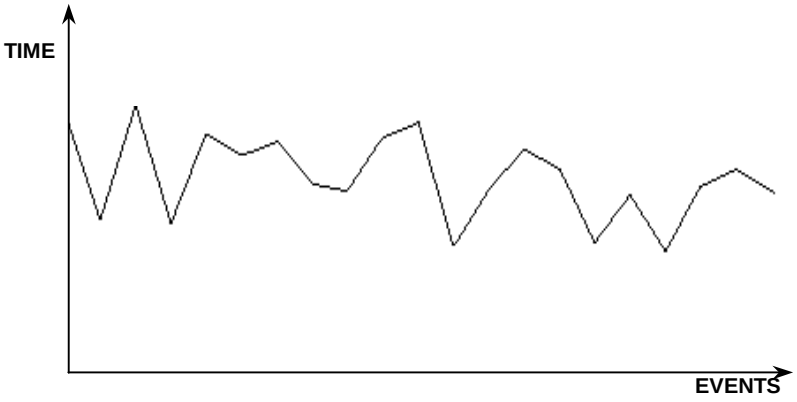
How to Use the Trend Tool



Display the waveform to be analyzed.

Apply a Timing Parameter — *period at level (p@lv)*, for example.





Plot the Trend of the Parameter.

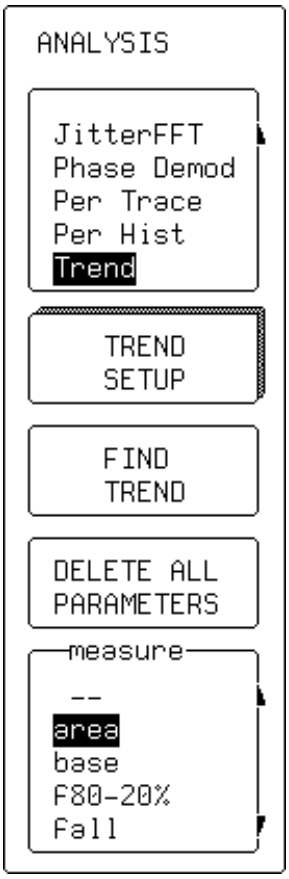
Set Up and Configure for Trends

The Trend Statistical Tool visualizes the evolution of a Timing Parameter over time in the form of a line graph. The graph's vertical axis is the value of the parameter; its horizontal axis the order in which values were acquired.

There are two methods to create a trend on the Jitter andTiming Analyzer. The easiest method is to use the Jitter Views toolbar Analysis button to access the Analysis menu. When this method is used, the trend will will be displayed on Trace C. This method is explained below:

1. **Acquire a trace on the display**
2. **Use the Horizontal Time/Div knob to adjust the waveform, if desired so that you view the area that you wish to trend.**
3. **Press the ANALYSIS button in the Jitter Views Toolbar and select Trend from the menu.**
4. **Press TREND SETUP and select the number of values to be contained in the trend.**
5. **Press More Trend Setup and Parameter Setup to select a parameter to be trended.**
6. **Trigger the analyzer until the required number of values have been trended.**

Note: This method assumes that you want to trend the Timing Parameter for the Jitter type as previously defined in the Setup Wizard menu.



To configure and then display trends, follow these steps:

1. **Press** MATH SETUP
2. **Then press the menu button for "REDEFINE A" — for example. This will place the Trend on Trace A.**
3. **Select "Yes" from the "use Math?" menu to enable math functions, including trending (*see following pages for menus*).**
4. **Choose "Trend" from the "Math Type" menu.**
5. **Select the line to be used in the Trend.**
6. **Choose the number of values to be placed in the generated Trend**
7. **Decide whether all the parameters generated from the waveform or only the average of all parameter calculations for each waveform acquisition should be placed in the Trend.**
8. **For more Timing Parameters, press or turn to obtain the parameter in the "Histogram custom line" menu.**
9. **Press the appropriate TRACE ON/OFF button 2 to display the Trend.**
10. **Select the "FIND CENTER AND WIDTH" menu to position the Trend automatically.**

use Math?

To choose a math function.

Math Type

For selecting "**Trend**".

MORE TREND SETUP

To access more trend setup options and the final trend-dedicated menu (*next page).*

FIND CENTER AND HEIGHT

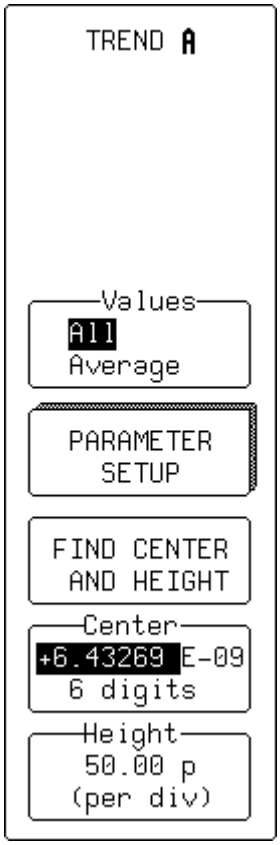
For positioning the trend automatically once it has been calculated. "FIND CENTER AND HEIGHT" places the trace appropriately, centering and scaling the trend without affecting the zoom and position settings.

Trend of

To select the parameter for trending, using the corresponding menu button or associated knob. Any of the configured parameters, displayed on the line beneath the grid, can be chosen.

using up to

For selecting — using button or knob — the number of values in the trend. A maximum of 20 000 values can be chosen for any one trend. When this maximum is exceeded, the parameter results scroll off the trend.



Values

To select "**All**" — for every parameter calculation on each waveform to be placed in the trend. Or "**Average**" — to trend only the average of all the given values calculated on a given acquisition, and to obtain one point in the trend per acquisition. Unless this is specifically required, "All" should be selected.

PARAMETER SETUP

To access the "CHANGE PARAM" menu group for selection of new, or modification of current, Timing Parameters.

FIND CENTER AND HEIGHT

For positioning the trend automatically once calculated. "FIND CENTER AND HEIGHT" places the trace appropriately, centering and scaling the trend without affecting the zoom and position settings.

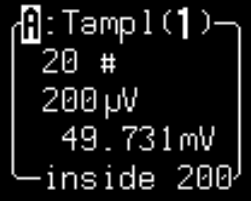
Center

To set the trend center value.

Height

To select the value of each vertical display division. The height per division multiplied by the number of vertical display divisions (eight) determines the range of parameter values centered on the number in the "Center" menu, used to create the trend.

***Reading Trends:** A trend is like any other waveform: its horizontal axis is in units of eventswith earlier events in the leftmost part of the waveform and later events to the right. And its vertical axis is in the same units as the trended parameter. When the trend is displayed, trace labels like the ones below — for Trace A in these examples — appear in their customary place on-screen, identifying the trace, the math function performed and giving horizontal and vertical information…*

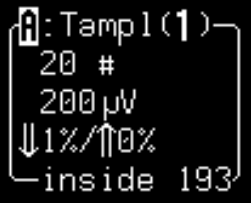


 # number of events per horizontal division

Units per vertical division, in units of the parameter being measured

Vertical value at point in trend at cursor location when using cursors

Number of events in trend that are within unzoomed horizontal display range. ,

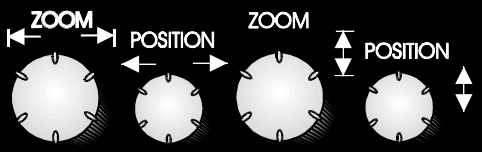


Percentage of values lying beyond the unzoomed vertical range when *not* in cursor measurement mode.

Note for Display of Trends:

- ***The display of defined traces is controlled by the TRACE ON/OFF buttons.***

- ***Expansion, or zooming, and positioning of traces is controlled by the horizontal and vertical ZOOM and POSITION knobs.***



- ***When Multi-zoom is on, the ZOOM and POSITION knobs are coupled and control all displayed traces at once. This is particularly useful when multiple trends of related parameters are displayed.***

- ***The*** 

button resets the multiplier for the trace expansion to '1' and the offset positioning to '0'. The button should be pressed for each reconfigured trace in order that traces can be cleanly and correctly positioned on-screen.

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