Analyzing a waveform

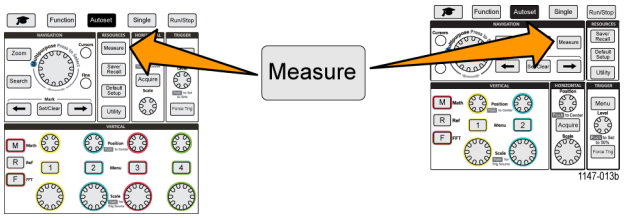
After having properly set up the acquisition, triggering, and display of your waveform, you can then analyze the results. Select from features such as displaying automatic measurements, using cursors to measure specific parts of a waveform, using math to perform an operation on two waveforms, and using FFT to display the frequency components of a signal. You can also use **Gating** to analyze only a specified part of a waveform when you take measurements. (See page 55, *Taking a measurement on just a part of the waveform (Gating)*.)

Taking automatic measurements

Automatic measurements are a way to quickly take common measurements on a waveform, such as signal frequency, period, rise and fall times, and so on. You can take up to a total of six measurements at once, on any combination of input channels and a math waveform. The measurements are shown on the main screen in the order they were selected.

To take an automatic measurement:

1. Acquire and display a triggered waveform.
2. Push **Measure**.
3. Push the side-menu button to select the channel on which to take measurements.

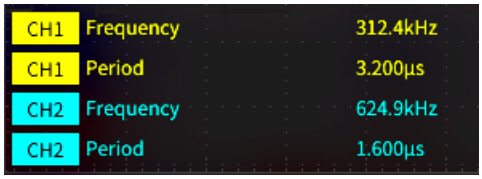


4. Use the **Multipurpose** knob to select and click a measurement. (See page 52, *Automatic measurement descriptions*.)

   The **Measurement Selection** bar at the top of the screen updates to show that a measurement was selected for that channel (indicated by color), up to a maximum of six measurements total to display.
5. Measurements with a down triangle contain a list of the input channels to use for that measurement when selected. Select and click the input channels. Then push the **Menu On/Off** button to close the list.
6. To unselect a measurement, highlight that measurement and click the **Multipurpose** knob. To deselect a measurement for a different channel than the current channel, push the side-menu button for the channel of the measurement, then use the knob to select and click the measurement to remove it.
7. To unselect all measurements, push the **Remove All Measurements** side-menu button.
8. To close the measurement menu and show the selected measurements on the screen, push the **Menu On/Off** button.

   Measurements are shown on the screen. Pushing the **Menu On/Off** button also turns on or off showing the measurements on the screen.



Automatic measurements tip

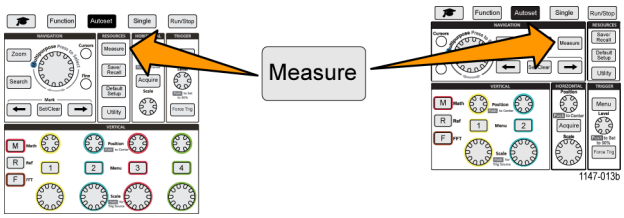
- A ⚠ symbol appears next to a measurement if a vertical signal clipping condition exists. Part of the waveform is above or below the upper or lower edge of the screen. Signal clipping causes inaccurate measurements. To obtain an accurate measurement, turn the **Vertical Scale** and **Position** knobs so that all of the waveform is on the screen.

Taking a measurements snapshot

The **Snapshot** measurement (in the **Measurement** menu) displays all single-channel measurements on one screen for a single acquisition of one channel. You can view the snapshot results and save a screen image of the snapshot measurements to a file.

To take a measurements snapshot:

1. Acquire and display a triggered waveform.
2. Push **Measure**.



3. Push the side-menu button of the channel for which to show the measurement snapshot. You can only take a snapshot of one channel at a time.
4. Use the **Multipurpose** knob to select and click **Snapshot**. the snapshot screen opens immediately.
5. If the **File Save** button is set to save an image, push the **File Save** button to save the snapshot image to a file. (See page 70, *Saving files to USB with the Save File button*.)

6. Push the **Menu On/Off** button to close the **Snapshot** screen and return to the measurements menu.

Snapshot measurement tip

- The measurement snapshot does not mark a measurement if a vertical clipping condition exists. Clipping is where part of the waveform is above or below the display. To obtain a proper measurement snapshot, use the **Vertical Scale** and **Position** knobs to make all of the waveform appear in the display.
- You can also use **Gating** to analyze only a specified part of a waveform when you take a measurement snapshot. (See page 55, *Taking a measurement on just a part of the waveform (Gating)*.)