

What is Interval At Center?

With Auto-sampled frequency measurements, the Analyzer uses a measurement method that provides better resolution than traditional frequency measuring techniques. Conventional techniques evaluate the input signal only once at the beginning of the sampling interval and once at the end of the interval.

A characteristic of the implementation of this method in the Analyzer is that each measured interval requires a constant number of edges from the input (an edge is a detected voltage threshold crossing of the input signal). Since the number of edges is constant per sample, the time per sample is dependent on the actual frequency of the input. The higher the frequency, the less time it takes to accumulate the same number of edges.

For any specified frequency, the time it takes to produce a constant number of edges is known. Thus, the control is called "Interval At Center," referring to the fact that when the input frequency is at the center frequency (specified on the Vertical menu), the sampling interval will be the value you have selected. If the input frequency goes up, the interval will be shorter, if the frequency goes down, the interval will be longer.

Auto Sampling (with Auto Interval at Center)

When using the "vs. Time" mode, the sampling interval choice is determined from the time/div setting on the Timebase menu. The selected interval can be seen on the sampling menu, beneath the softkey labeled "Interval At Ctr" on the Sampling menu.

Auto Sampling (with Manual Interval at Center)

You should use Interval at Center/Manual when you want to continue using the measurement method provided by auto sampling, but want to hold the Interval at Center value to a relatively fixed value. Having switched to Manual, you can be sure that this sampling interval approximation will not change when other parameters affecting the measurement time are changed. If you select Preset or Autoscale, the Interval at Center mode is reset to Auto.