

How to Use Phase Demodulation

Phase Demodulation of a clock or datastream signal is accomplished with the JitterTrack of Time Interval Error (TIE) function (also included in the JitterTrack menu “type” listing). The JitterTrack of TIE measures the time difference between the edges of the acquired waveform relative to an ideal clock. It is ideal for extracting spread spectrum modulation frequency from a clock signal, or the analysis of communications systems employing continuous phase modulation as well as those using phase shift keying for transmitting digital data.

There are two methods to create a JitterTrack of TIE (phase demodulation) on the Jitter and Timing Analyzer. The easiest method is to use the Jitter Views toolbar Analysis button to access the Analysis menu. When this method is used, certain defaults are set, and the JitterFFT will be displayed as Trace C. This method is explained below:

1. Acquire a clock or data signal.
2. Press the Analysis button in the Jitter Views Toolbar and select Phase Demod from the menu.
3. Press MORE JITTER SETUP and either set the ideal clock frequency manually, or use the FIND FREQUENCY soft key. (In some cases, the FIND FREQUENCY routine may not return the frequency. If that happens, manually adjust the frequency to get close to where it should be and try again).

A JitterTrack of TIE can also be set up on any math trace by following the instructions below:

1. Press Math Tools.
2. Press the menu button to “REDEFINE D”, for example. This will place the JitterFFT on trace D.
3. Select **YES** from “Use Math” menu to enable math functions, including Jitter.
4. Choose **Jitter** from the “Math Type” menu.
5. Choose **Interval Error** from the “Type” menu.
6. Make a selection for **CLK** or **Data**.



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7. Make a selection for the source “of”.
8. Use MORE JITTER SETUP to set the ideal frequency, or to FIND FREQUENCY.

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