Jitter Analysis

Once you have acquired signal data and characterized the jitter using the various time, statistical, and measurement views available in the Jitter and Timing Analyzer, it is likely that you will need some additional analysis tools to locate sources of high jitter so that they can be eliminated.

The various analysis capability that is included or optional for the analyzer is briefly described below. Each analysis area has its own chapter with more detailed explanation.

Analog Persistence

Analog Persistence offers the advantages of analog display in a digital storage oscilloscope. The display looks like analog, and is fast, too. But it also has the data manipulation, flexibility, and statistical analysis capabilities only found in a digital instrument. Reference Chapter 9 of your *WavePro Operator's Manual* for more information.

Jitter FFT

Jitter FFT is the FFT of **JitterTrack.** This provides a spectral view of frequency that isolates jitter from the rest of the signal to give an accurate picture of the problem. By determining and correcting the causes of timing variation at observed spectral values, peak-peak jitter can be substantially lowered. Reference Chapter 6 for more information on setup and use.

Phase Demodulation

Demodulation is a **JitterTrack** display that 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. Reference Chapter 7 for more information on setup and use.

Persistence Trace

Persistence Trace is a new concept for displaying the data acquired from multiple sweeps of a waveform. A vector trace is computed, based on the bit map of the underlying multiple signal acquisitions. Detail is then represented in a choice of three graphic forms, each representing a different characteristic of the waveform. Insight into edge details is given down to a few picoseconds — valuable in applications such as the examiniation of fast signal transitions. See Chapter 8 for more information on setup and use of Persistence Trace.

Persistence Histogram

Persistence Histogram analyzes a vertical or horizontal slice of a persistence map of multiple waveforms. The resultant bar chart shows a numerical measurement of the timing variations of a signal, which are observed qualitatively in the persistence display of the signal. A typical application is characterizing the jitter in a communications signal eye diagram. See Chapter 9 for more information on setup and use of Persistence Histograms.

Trends

Trends represent the evolution of timing parameters in line graphs whose vertical axes are the value of the parameter, and horizontal axes the order in which the values were acquired. Reference Chapter 9 for more information on setup and use. See Chapter 10 for more information on setup and use of Plotting Trends.

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