# JTA2 Анализ джиттера и временной анализ

Пакет JTA2 используется для определения эффектов модуляции и фазового дрожания неустойчивого сигнала, для отслеживания изменений по времени и для выполнения измерений во временных, частотных и статистических областях. Просмотр дрожания сигнала и соответствующая ему гистограмма, позволяют вам вести наблюдения за системой такими способами, которые ранее были не доступны.

JTA2

JTA2
Jitter and Timing Analysis

- **A rich set of timing measurements for clock, clock-to-data, and data stream analysis**

- **Expanded parameters with three views of jitter, including JitterTrack™**

- **Persistence functions**

- **High-speed clock and data jitter analysis package**

- **High-accuracy, peak-to-peak jitter measurements**

- **Spot modulation effects, frequency drift and other timing problems**

- **Flexibility of operation – to do exactly what you need**
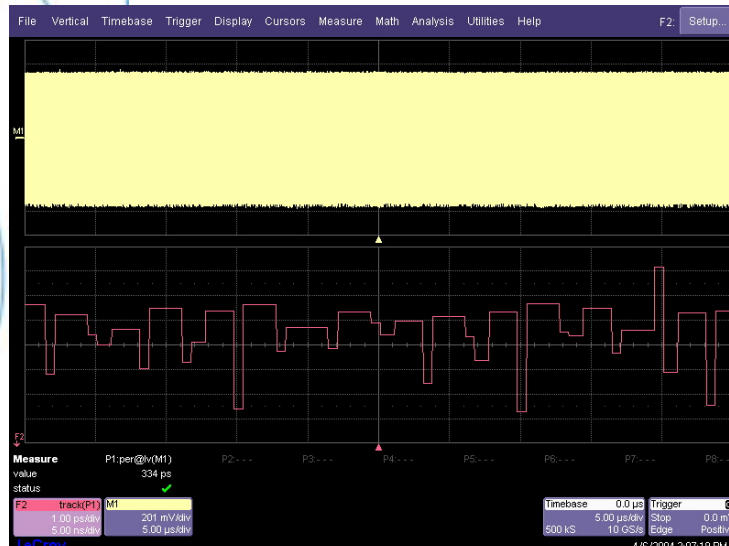
LeCroy provides the most complete and useful solutions available today for characterizing, validating, and debugging signal jitter and timing.

LeCroy Digital Storage Oscilloscopes offer measurement and analysis capabilities that help you to solve your complicated design problems. Along with LeCroy's X-Stream™ architecture that yields fast update results of one measurement or a chain of operations, LeCroy offers many advanced software options to target your specific applications.

Jitter and Timing Analysis:
The JTA2 software package for LeCroy Oscilloscopes provides advanced jitter and timing analysis capabilities. It uses LeCroy's long memory and Zoom architecture to capture and precisely measure thousands of cycles of timing information and then present the results with three different views. View flexibility helps an engineer seek out and identify the source of jitter in an electrical or electro-mechanical system.

Statistical View:
LeCroy's statistical view of jitter gives insight by providing a view of the distribution of jitter. As with

any noise-based phenomena, the peak-to-peak value grows as more values are measured. Therefore, anyone interested in determining worst-case timing and jitter values needs to consider the number of measurements taken in making this determination. More is better. With memory from 1M to 100Mpts/channel JTA2 provides the largest data population for statistical measurements.

Spectral View:
Because jitter may have various frequency components, it is important that a spectral view of jitter be available. This view often reveals critical insights into the sources of jitter. LeCroy provides a direct view of these frequency components as an FFT of jitter. Unlike FFT's of a clock signal, this provides a spectral view that is purely of the timing measurement variations.

LeCroy

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LeCroy JitterTrack:

The key to understanding and debugging jitter is JitterTrack. Imagine that each clock period is represented by a horizontal arrow, as shown below. Variations in time (of the period) are not clear at all. Now imagine that each of these arrows is flipped perpendicularly and placed time-synchronized to the individual periods they represent. The amplitude of each arrow represents the time duration of each period. By connecting the tops of those arrows, you now can see how a particular jitter measurement varies over time, perfectly synchronized to the signal being measured.
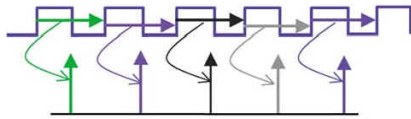
Time Interval Error (TIE):

LeCroy oscilloscopes and JTA2 Jitter and Timing Analysis Package can be used to test both optical and electrical communications signals. One type of analysis function which is common for both types of signals is Time Interval Error (TIE). TIE measures the position of each edge in a waveform and compares it to the position the edge would have if the waveform frequency was perfect. This analysis can reveal modulation effect, phase noise, and other sources of timing variations.

Persistence Functions:

JTA2 includes the ability to further process persistence waveform data. For example, by creating a new trace as the mean of a persistence waveform you are able to analyze the data using the parameters on the oscilloscope.

JTA2 Jitter and Timing Analysis Package is available on:

- WaveMaster Series
- DDA
- WavePro 7000 Series
- WaveRunner 6000 Series
- WaveRunner Xi Series

Other Related Products: Serial Data Analyzer (SDA):

Characterizing jitter is critical to the measurement of serial data signals. The SDA is the most complete jitter measurement instrument in the industry. With One-button access to complete serial data analysis tools including eye patterns with failure location, jitter analysis of total, random, and deterministic jitter, and bit error rate with error map. All measurement results are presented in a single, easy-to-interpret display, which contains all of the pertinent data necessary for validation of serial data streams.