

LeCroy Digital Oscilloscopes

Get the Complete Picture

Clock Certification and Test Module

LEADING FEATURES

- **Test module for Rambus® and other clock sources**
- **Performs all DRCG jitter tests**
- **New parameters for n-cycle jitter and duty cycle error**
- **Provides long capture mode required for statistically significant results**
- **Jitter noise floor of 2 ps**

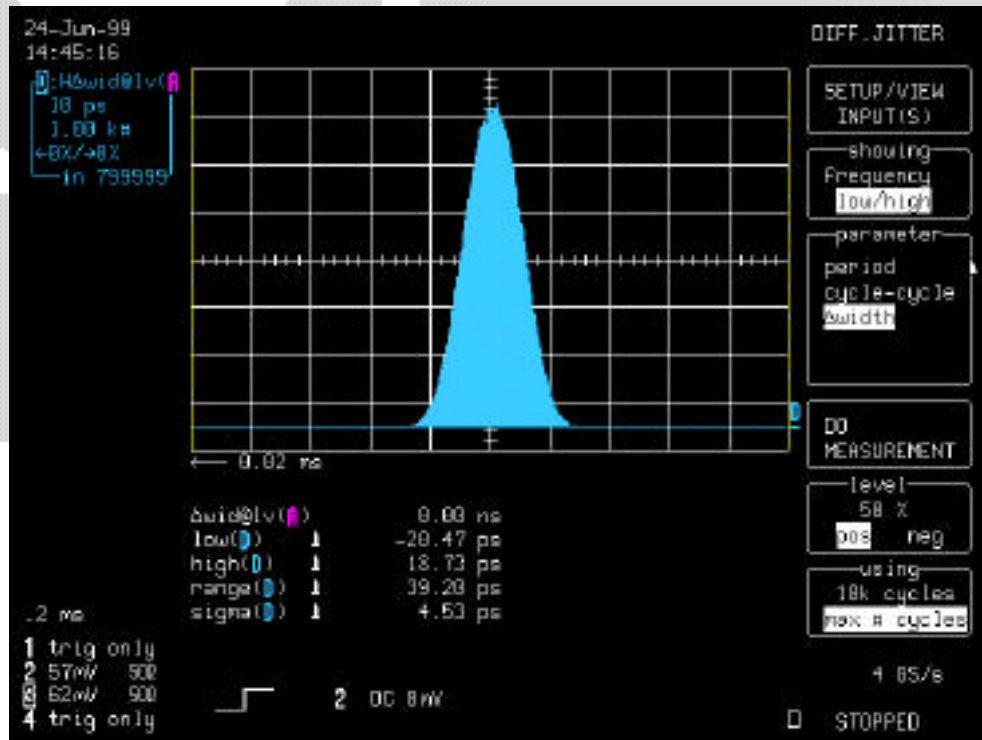


Figure 1: Duty cycle error measurement performed on 800,000 clock cycles. The RMS jitter distribution is 4.53 ps with a peak-to-peak jitter range of 39.2 ps.

The Clock Certification and Test Module (CCTM) for Rambus® clock sources is an enhancement to the LeCroy Jitter and Timing Analysis (JTA) package. CCTM is a critical tool for engineers incorporating Rambus technology into their products or using high-speed clocks where the measurement of clock jitter is very important. It operates on LeCroy's LC584AL and LC584AXL oscilloscopes. The CCTM uses the high sampling rate (up to 8 GS/s), long memory (up to 16 Mbytes) and accuracy of these scopes to perform statistically meaningful peak-to-peak and other jitter measurements.

The CCTM software package adds enhanced algorithms for very precise calculation of jitter parameters and an easy way to automatically configure the scope per Rambus test requirements. These capabilities combine with the

long memory and high-stability clock in the LC584 Series to bring unmatched power to jitter and timing measurements. No other instrument on the market can perform the critical set of tests and analysis for high-speed clocks that is available in this system.

Now you can capture up to 1 million or more consecutive clock cycles with zero deadtime and then immediately apply the power of CCTM to track signal timing instabilities – with a jitter noise floor of 2 ps – to zoom in on their causes. Many measurements, such as n-cycle, require that analysis be performed on consecutive clock cycles only. Accurate determination of peak-to-peak values for these measurements absolutely requires the long capture memory and analysis capabilities provided by the CCTM and the LC584.

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Figure 2:
The 2 ms long JitterTrack™ trace of cycle-to-cycle jitter (lower trace) directly pinpoints the source of increased cycle-to-cycle jitter due to the slight AM modulation present on the clock signal (upper trace).

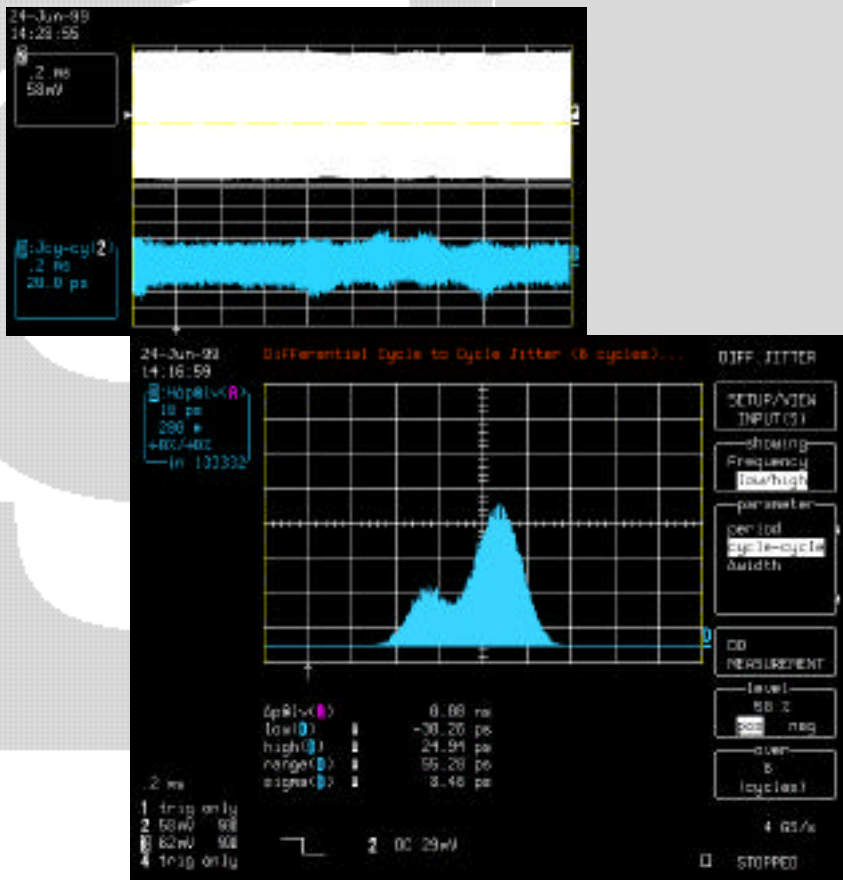


Figure 3:
Results of 133,332 measurements of groups of six cycles reveal clock instability as shown in the bimodal histogram. In making n-cycle jitter measurements, short-memory scopes are limited to capturing 500 or even fewer groups of cycles, resulting in less accurate peak-to-peak values and distributions.

SPECIFICATIONS

The Clock Certification and Test Module contains:

- Advanced algorithms for calculation of timing parameters with increased speed and accuracy.
- Customization of default settings to make Rambus-specified and other clock tests easy.
- Two new parameters for measuring n-cycle variations (n = 1-8) and duty cycle error on a cycle-by-cycle basis.
- Enhanced jitter measurement accuracy of 2 ps RMS*.

Only the CCTM and LC584AL/AXL give system integrators who use Rambus technology the accuracy, measurement algorithms, memory length, and processing performance they need for highly accurate measurements of peak-to-peak jitter. And only LeCroy's patent pending JitterTrack feature provides the ability to easily and confidently determine the source of excessive jitter due to power supply variances, cross-coupling modulation or other sources.

* Jitter measurement accuracy is measured using an HP8133A pulse generator.

ORDERING INFORMATION

CCTM An application-specific module for testing Rambus technology and other high-speed clocks.

RK-CCTM Retrofit of CCTM to a previously delivered oscilloscope.

Note: The CCTM package is available as a module for the JTA software package in combination with a model LC584AL or LC584AXL oscilloscope.

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