

# product line

SIA Family

## SIA-4000

### Signal Integrity Analysis Solution

#### Critical Signal Integrity Testing

New generation serial data standards with increasing speeds are continuously being introduced, causing significant signal integrity, jitter and performance test issues during the design and production of your devices. Robust performance testing is needed to ensure higher design margins and interoperability, and as a result, higher production yields.

Now, with the Wavecrest SIA-4000, generate significant detail about the performance of your devices, even those exhibiting complex jitter behaviors. Perform optimized signal integrity testing - with the lowest noise floor in the industry - on serial data applications up to 12.5 Gb/s, as well as on clock and PLL applications up to 15 GHz. With this newest addition to Wavecrest family of signal analysis solutions, be assured of the most accurate reproduction of your signal obtained from our unique combination of both time domain measurements and waveform representation.

#### SIA-4000D

The SIA-4000D model is designed for serial data analysis on applications such as PCI Express™ Gen 2, FB DIMM, 8X Fibre Channel and SONET. Using the compliance toolsets designed for industry standard specifications, you will go beyond the minimum compliance testing. For example, with the PCI Express toolset, perform reference clock compliance tests including 3<sup>rd</sup> order PLL transfer function peaking, rise edge and fall rates and duty cycle along with a complete set of serial data compliance analysis.

If devices fail or are marginal, dig deeper into the analysis by using the diagnostic tools to find out the root cause of the problem. Isolate jitter components into RJ and DJ to calculate Total Jitter. Testing can be done on 2, 4 or 5 differential channels.

#### SIA-4000C

The SIA-4000C model provides a complete measurement toolset for characterizing the performance of clock, PLL or oscillator devices. Measure amplitude, jitter components, frequency, period, jitter spectrum, PLL bode plot, transfer function, damping factor, spread spectrum and more. A single button clock analysis tool provides quick and easy results to determine the overall performance of the clock signal.

#### Streamlined Transition from Lab to Production

Wavecrest signal integrity analyzers, including the SIA-4000, are the only single box solutions designed for both the lab and production test environments. Tests can be automated on the bench with National Instruments LabVIEW™ drivers. By using the same family of SIA solutions, easily migrate from lab, to characterization parametric testing, to high-speed, high-volume production testing, ensuring a streamlined transition process and faster time-to-market.



#### Benefits of SIA-4000

**With >35 GHz Timing Bandwidth, Analyze 12.5 Gb/s Serial Data Applications and 15 GHz Clock and PLL Applications**

**Lowest Noise Floor in the Industry**

**Pinpoint Root Cause of Problems Even on those Exhibiting Complex Jitter Behaviors**

**Test Beyond Minimum Compliance Requirements such as Characterization of Reference Clock Performance**

**Streamline Transition from Lab to Production by using Same Family of Instruments**

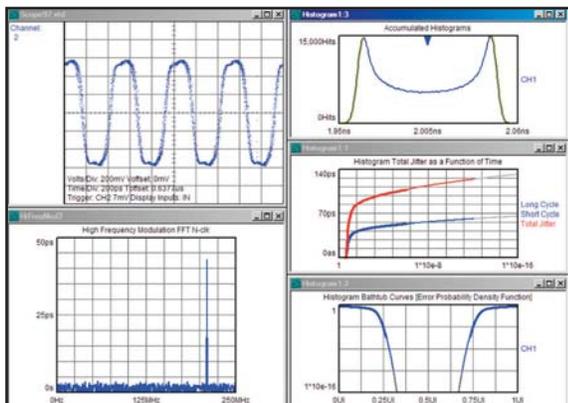
**Upgrade with Minimum Reinvestment Costs**



WAVECREST

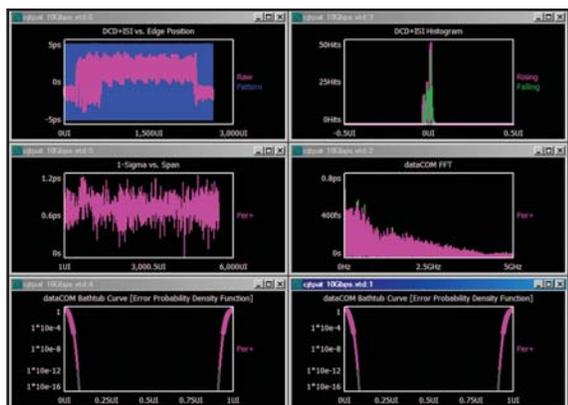
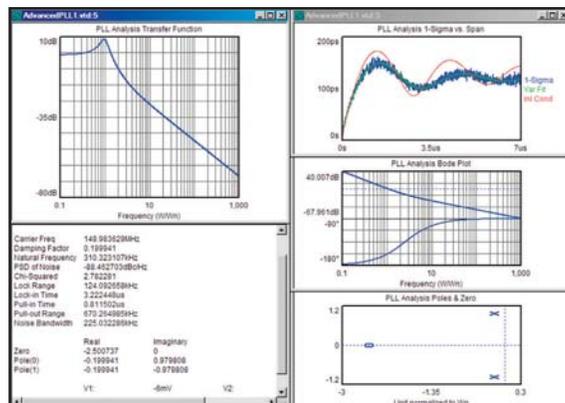
# Detailed Diagnostics and Compliance Testing

Analyze clock waveform, RJ, DJ, TJ, jitter spectrum, etc.



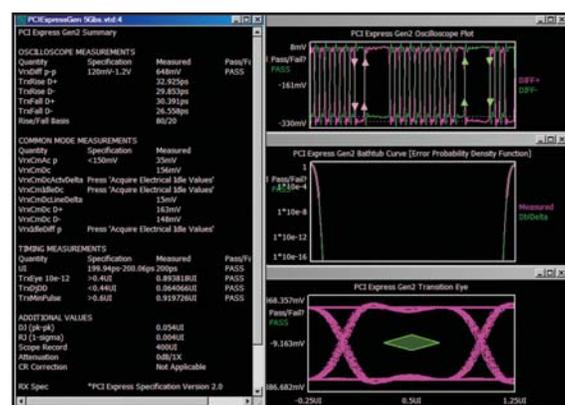
Clock

Measure 2nd order PLL transfer function, damping factor, bode plot, etc



Diagnose serial data RJ, DJ, TJ, jitter spectrum, etc. up to 12.5 Gb/s

Data



Perform compliance and mask testing, pass/fail for PCI Express™ Gen 2, SATA II

GigaView is a trademark of Wavecrest Corp.  
PCI Express is a trademark of PCI-SIG  
LabVIEW is a trademark of National Instruments

## Product Specifications

SIA Model	Application	Timing Measurement Bandwidth	Signal Timing Measurement Frequency	Oscilloscope Bandwidth	Number of Channels	Soft Clock Recovery
4000D	PCI Express Gen 2, FB DIMM, 8x Fibre Channel, SONET	35 GHz	12.5 Gb/s	15 GHz	2,4 or 5	Adjustable loop response included
4000C	Clocks, PLL, Oscillators	35 GHz	15 GHz	15 GHz	2,4 or 5	Adjustable loop response included

**WAVECREST**

Be certain of the signal you send.

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