WavePulser Signal Integrity Studio

WavePulser Signal Integrity Studio enhances the modeling and simulation capabilities of the WavePulser 40iX application, adding eye and jitter measurements.

Key Features

Seamless integration with WavePulser 40iX S-parameter measurements

Full signal integrity analysis of equalized receiver signal

Fast eye diagramming

Advanced jitter analysis

Co-simulation of measured and/or modeled network characteristics

De-embedding and emulation of channel and fixture responses

Emulation of CTLE, DFE & FFE equalizers and PLL

USB hasp key enables standalone operation for additional users

Emulate the Complete Serial-data Channel

WavePulser Signal Integrity (SI) Studio combines S-parameter, Impedance profiling and de-embedding measurements, channel and equalizer modeling, eye diagrams and jitter analysis in a single affordable software package. Users can analyze the effects that impedance mismatches, losses, emphasis, and equalization choices have on the signal integrity characteristics of a device under test. S-parameters measured live by the WavePulser 40iX, or imported if already measured, link directly to the user's configuration for emulating or de-embedding channels and fixtures. Users can also emulate CTLE, DFE, and FFE equalizers, then the resulting eye diagram and advanced jitter analysis emulate the full serial data channel.

WavePulser Studio is included as a single license in the WavePulser 40iX-BUNDLE or can be purchased as an additional license for offline access to additional users.

## Using S-parameters as a Behavioral Model in System Simulation

Interconnections are not transparent. See the effects of measured and imported S-parameters immediately. S-parameters measured live by the WavePulser 40iX, or imported if already measured, link directly to the user's configuration for emulating or de-embedding channels and fixtures. As the WavePulser 40iX acquires new S-parameters, the application rapidly shows the effect of the newly acquired measurements. The WavePulser 40iX measures S-parameters from DC to 40 GHz with the press of a single button.
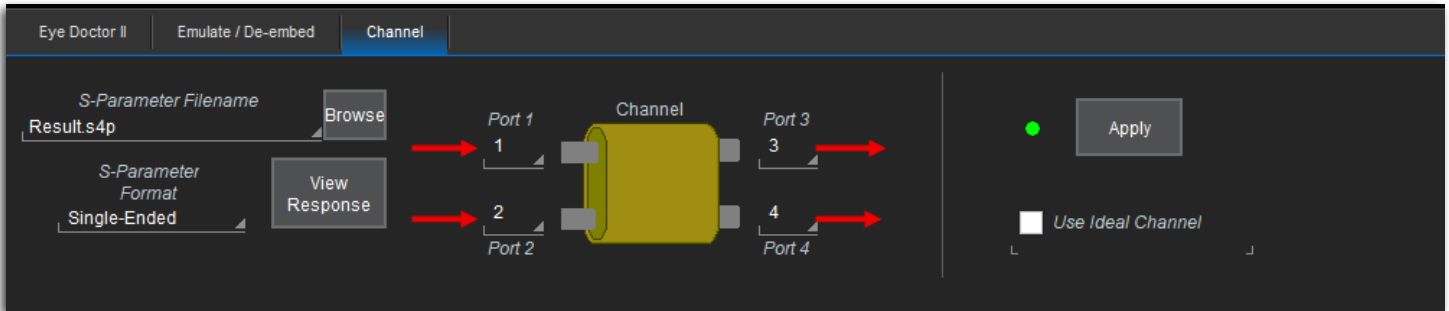
Channels are de-embedded or emulated using either modeled or measured S-parameters.

Simulate Serial Data Patterns with Impairments

Users can start the analysis with SI Studio by simulating a long serial data pattern as close as possible to the real signal at which the device under test will be used. Serial data waveform types include NRZ, Sine, PAM4 and clock. Impairments such as vertical noise, horizontal jitter, overshoot/undershoot, periodic jitter aggressors and ISI can be configured. Waveforms previously saved on Teledyne LeCroy oscilloscopes can be used as a signal source.
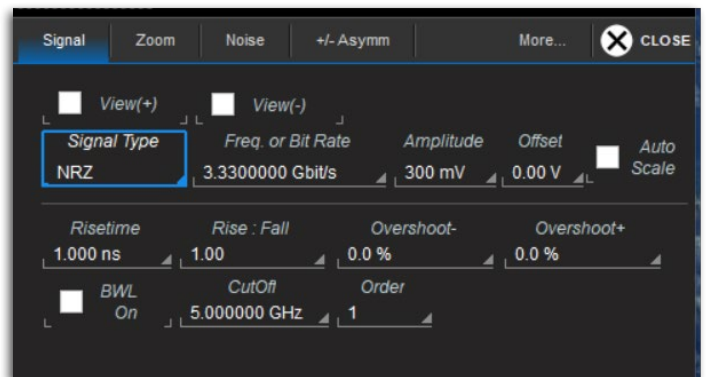

Seamless Integration with WavePulser 40iX

When connected to a WavePulser 40iX it allows the measurement of S-parameters that can be immediately used in simulations to study the signal integrity characteristics of the device under test.

WavePulser-SI Studio integrates seamlessly with the WavePulser 40iX, providing measurement, modeling and simulation in a single software package.

Determine Optimal Equalizer Settings

Users can open up closed eyes via a simple GUI for configuring pre-emphasis, de-emphasis, continuous time linear equalization (CTLE), feed forward equalization (FFE) or decision feedback equalization (DFE) filters, and standard or customizable PLL settings. Users can configure settings manually, or allow the software to configure automatically.
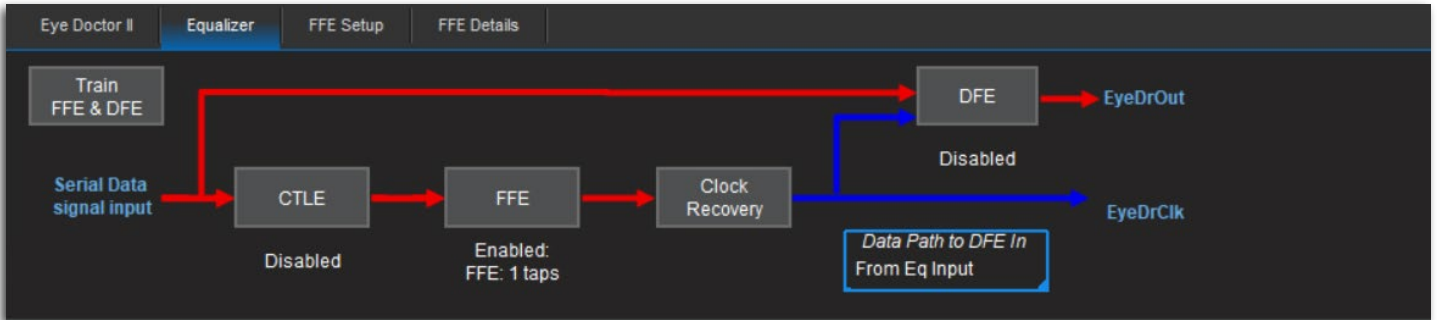
*Equalizer and pre/de-emphasis (not shown) are easily modeled via SI Studio's "EyeDoctor II" dialogs.*

Rapidly Measure Eye Diagrams

A quickly created eye diagram is available for analysis. In addition, users can simultaneously measure up to 11 eye diagram parameters and perform mask and IsoBER tests to determine if the entire channel, including equalizer settings result in a compliant eye.
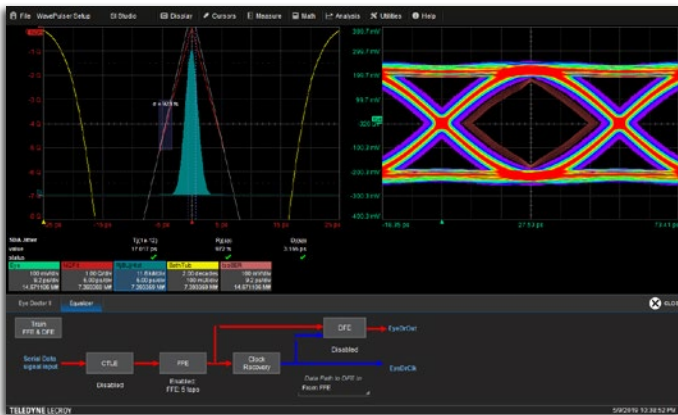
Advanced Jitter Analysis

WavePulser-Signal Integrity Studio has multiple views of jitter to give insight of signal integrity issues in the design of the channel and equalizer. Jitter analysis includes standard complete jitter breakdown analysis such as Tj, Rj, Dj, Pj, ISI, DCD and DDj measurements, jitter spectrum, jitter histogram and more.
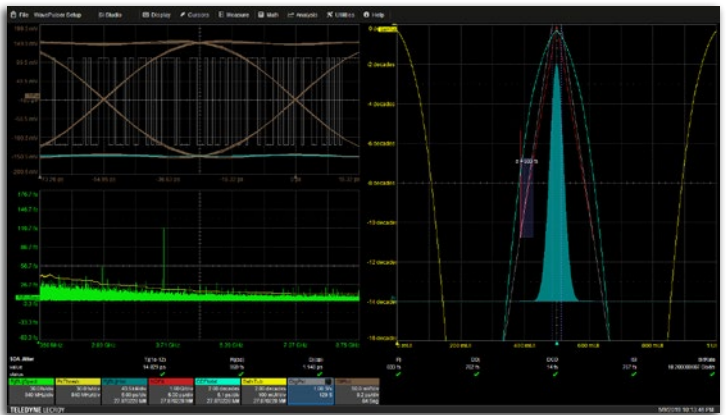
A rich set of jitter and eye diagram analysis tools yield deep insight signal integrity issues of the device under test.

Standalone Operation and Use When Connected to WavePulser 40iX

A USB hasp key enables standalone operation of SI Studio. Furthermore, when connected to a WavePulser 40iX it allows the measurement of S-parameters that can be immediately used in simulations to study the signal integrity characteristics of the device under test.

Product Description	Product Code
Additional license (USB Hasp Key) for Signal Integrity Studio, Analysis & Simulation Software for WavePulser 40iX High-Speed Interconnect Analyzer	WavePulser-SISTUDIO

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