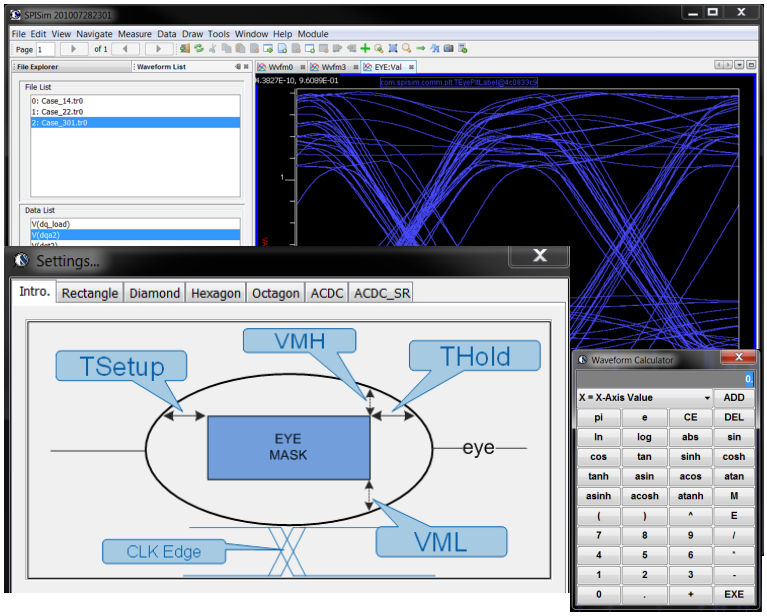
SPIVPro

Waveform Viewer/Analyzer

DATASHEET



SPISim Environment Overview:

With the ever increasing fast data rate in today's system design, a growing percentage of products suffer from signal degradation. Noises such as over/undershoot, ringing, jitter and incorrect setup-hold time caused by impedance/length mismatching may not only decrease the data transmission rate, but also cause system to fail.

Conventionally, hardware engineers and signal integrity specialists alike relies on multiple tools (e.g. solvers, matlab like scripting environments or customized tools etc) to analyze these signaling issues. While most of the users only utilize very small portion of these tools' capabilities, yet they spend lots of resources (e.g. licensing cost and engineering efforts) to acquire the capabilities and be familiar with the tool usage.

SPISim's products integrates most frequently used signal/power analysis capabilities in a single easy-to-use environment at very reasonable cost. It is to serve most SI/PI engineers' daily tasks' needs and minimize underutilized tool cost.

APPLICATION SCOPES:

- General purpose, multi-format simulation and measurement waveform viewing.
- Time-domain and frequency-domain measurement and data analyses.
- Built-in signal generator, save stimulus as HSpice* compatible format.
- Advanced features supported via extra add-ons modules:
  - ◊ SPITPro for transmission line;
  - ◊ SPISPro for scattering parameters;
  - ◊ SPIDPro for DDR post-processing.

MAJOR BENEFITS:

- Single integrated environment with all others SPISim's products (e.g. MPro for IBIS modeling), straight-forward UI.
- Support most industrial standard simulation/measurement data format.
- More than 20 SI specific measurement available, such as peak-to-peak, edge/peak valley detection and averaging etc.
- More than 20 waveform analysis capabilities built-in, such as correlation, integration, scaling, resampling etc.

SPIVPro Overview:

Simulation or signal waveform viewing, measurement and processing are essentials to tasks for signal/power integrity analysis. A powerful, high-performance yet versatile waveform tool is thus a must have for each productive signal/power integrity engineer.

SPIVPro product is a waveform viewer/tool designed for signal/power integrity analysis, measurement and processing. Built on-top of SPISim framework, it provides an unified, straight-forward environment with many general and advanced analysis capabilities. It supports common simulation, lab-measured data or even IBIS models. SPIVPro also has scripting functionality for extended/customized processing. We also provide module customization service to meet your platform analysis challenges.

Multi-format Waveform Input/Output:

SPIVPro accept many different data types and formats for analysis. They including TD/FD data like HSpice's tr#/ac# format and comma-separated-value csv (e.g. excel), s-parameters, transmission line tabular table and IBIS model. Large data (>4GB or more) are also support for tr#/ac# and .s#p s-param format.

The following formats are supported for input/export:

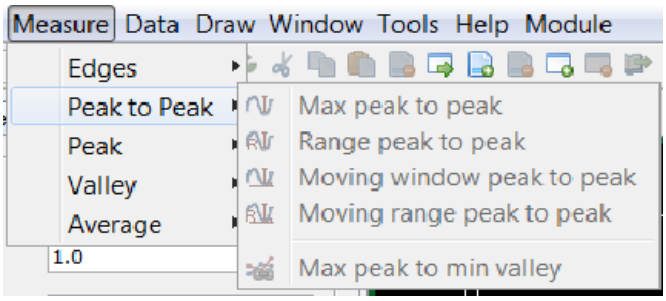
- Synopsys HSpice or ISpice output: .tr#, .ac#, .chi, .split/.spo (input only for .tr#/.ac#);
- Mentor Graphics Eldo: .swx;
- LTSpice: .raw, Matlab: .mat;
- General csv format from excel, xplot or lab measurement;
- S-param model in .s#p/.ts and .citi;
- Transmission line model in .rlc and .tab;
- IBIS data table curves up to Spec. V5.1.

Waveform Viewing/Operations:

SPIVPro supports multi-tab to view different traces from same or different data files. Within same tab, it supports multi-panel and multi-page waveform for easy comparison or correlation. Signal traces between pane can be synchronized in terms of viewing range.

Waveform can be panned, zoomed and selected for marking, measurement or color/display customization. Each axis can be displayed in linear or log format with/without grids. A handy screen-capture function is also built-in.

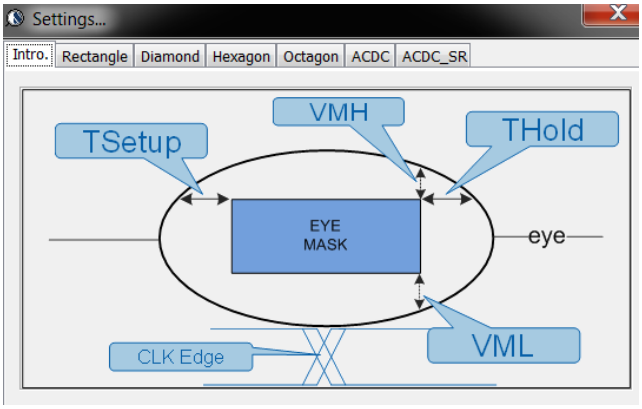
Waveform Measurements:



SPIVPro has more than 20 SI focused measurements built-in. These can be used to measure edges, peaks, peak-to-peak or valleys for various SI qualities such as ring-back, overshoot and undershoots etc. Values can be measured across whole x-axis range or specified fixed/moving timing windows. Data measured or peaks/point identified will be marked automatically fir easy reporting.

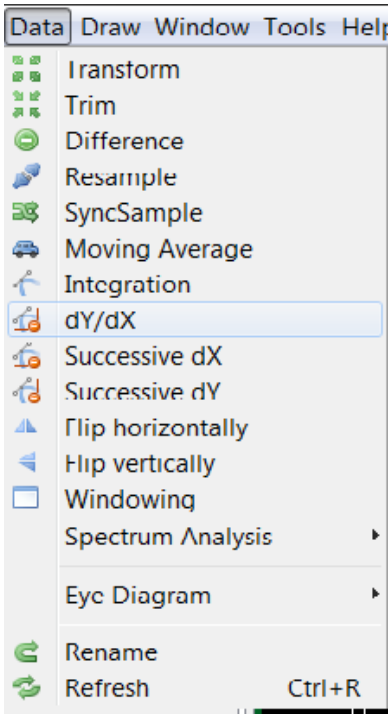
Range

Eye Mask/Aperture Viewing:



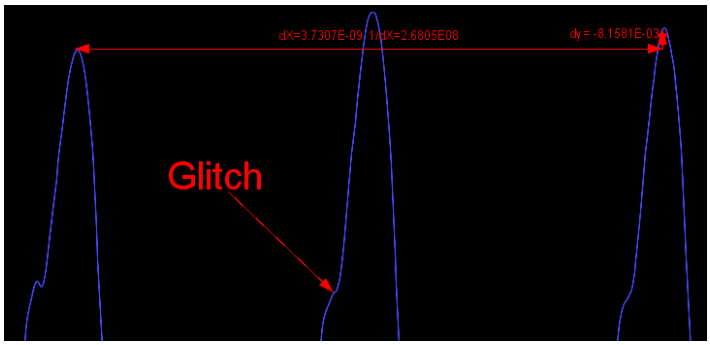
SPIVPro supports fixed-UI and clock synchronous eye plotting. Eye masks' specs can be defined and it will be placed automatically at the center of the eye diagram.

Data Analysis:



SPIVPro has about 20+ data analysis capabilities in both time and frequency domain. Processed signal traces can be further processed or saved as output file.

Data Markers:



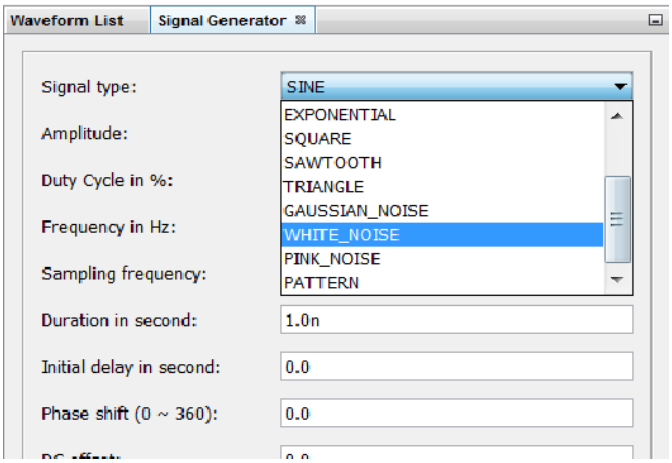
SPIVPro has many markers built-in for data labeling. Users may place arrowed text, shapes, free-draw on selected points. All their attributes and those for signal traces, such as color, width, line-style and font can be customized.

Waveform Calculator/Scripting:

SPIVPro has built-in waveform calculator to perform point-to-point calculation between traces and trace groups (like all traces from file A form a group v.s. all traces from file B as a group). Further more, multi-scripting languages such jscript, ruby and tcl are also supported. They can be used to access internal data points then perform further manipulation/calculation and displayed.

SPISim framework has a versatile text editor built-in, allowing viewing, editing text based data like IBIS models, scripting functions and spice file then invoke HSpice* directly from the VPro module environment.

Signal Generator:

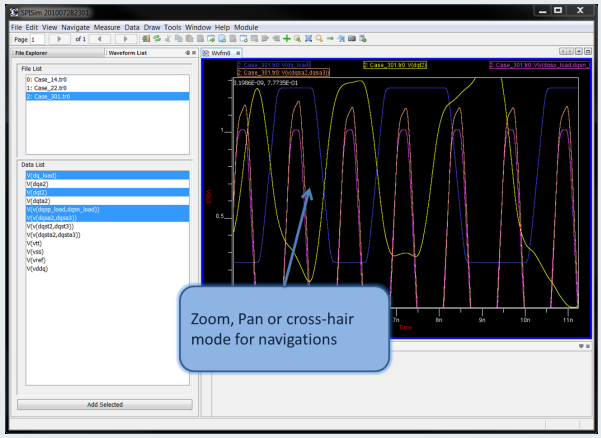


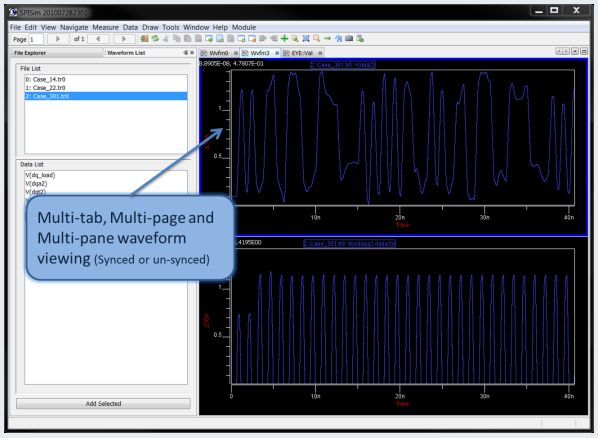
SPIVPro has a built-in stimulus generator module. There are more than 10+ pre-defined functions such as sin-square, square and white/pink noise with customizable attributes to support HSpice* compatible syntax generation. Generated waveform can also be generated in-place, displayed and performed further manipulation together with other signal traces. User-defined bit-patterns are also supported.

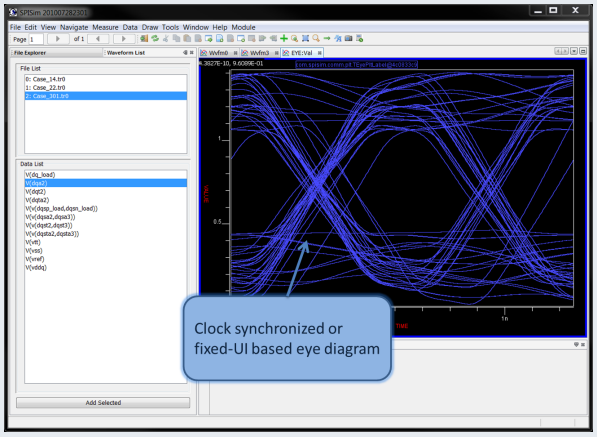
T-Line/S-Param/IBIS Data Support:

In addition to conventional SI/PI simulated TD/FD data, SPIVPro can also be used to inspect/measure data models for transmission lines, s-parameters and IBIS. These time-dependent or frequency dependent data in matrix or table format can be selected to be visualized or measured. Advanced analysis capabilities for these models, such as t-line impedance or cross talk measurement, s-parameter mixed-mode conversion or cascading analysis, are also supported via extra add-on modules.

Screenshots:







* SPISim LLC is a member of Synopsys HSpice Integrator Program. For more info. about HSpice, please visit www.synopsys.com.

** DPro, TPro and SPro add-on modules are available for purchase separated to work on-top of activated VPro module.