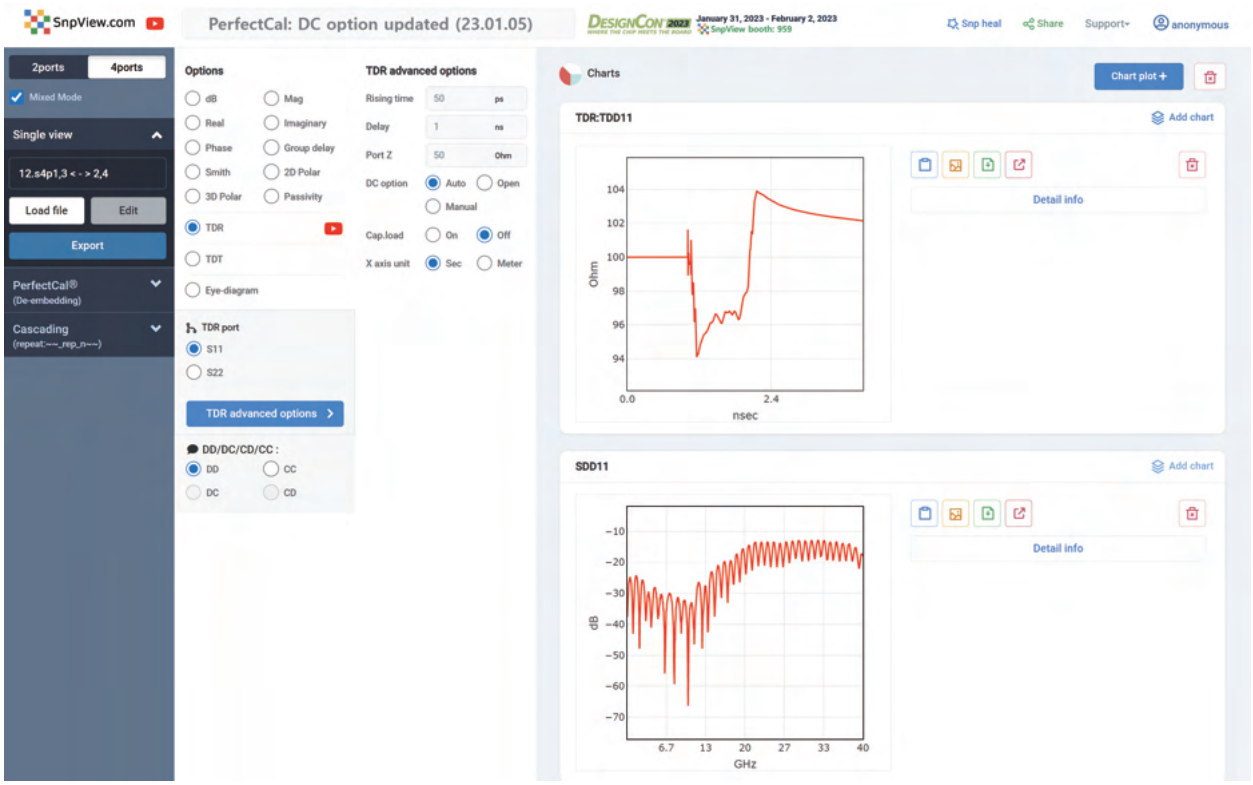
SnpView.com Easy, Fast and Accurate Channel Analysis Service

Channel analysis using S-parameters is costly and time-consuming. First, a high-performance computing server and channel simulator are required. In addition, the complex setup of the simulation and long computation time increase the verification time of the channel. To overcome this limitation, Snpview.com provides a web-based channel analysis service. Various analyses of the channel can be provided using only the local PC and web browser. In addition, newly developed time-domain analysis methods ensure fast and accurate channel analysis. It supports most of the analysis methods required for channel analysis, such as TDR, TDT, and eye-diagram.

Snpview.com is a web-based channel analysis solution. Channel analysis can be performed anytime and anywhere with a web browser without the need for expensive computing servers. Newly developed time-domain analysis methods provide fast and accurate channel analysis results. Currently, it offers most of the analytical methods required for channel verification and will support Web SerDes simulation (2023. 3Q).

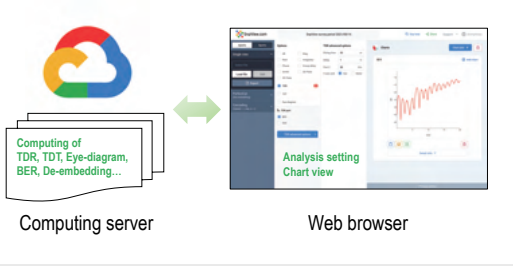
Key Benefits

- Easy view of S-parameters
- Fast and accurate time domain analysis methods
  : TDR, TDT, eye-diagram, BER
- PerfectCal®
  : Thru fixture de-embedding
- Enforcing causality and passivity of S-parameters
  : Heal function
- Share analysis results
- Web SerDes channel simulation (2023. 3Q)

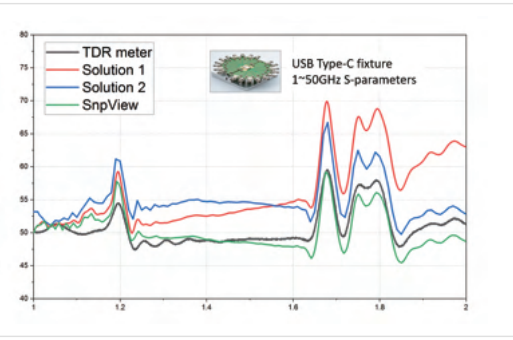


SnpView.com : Web based channel simulation
(Support chrome browser)

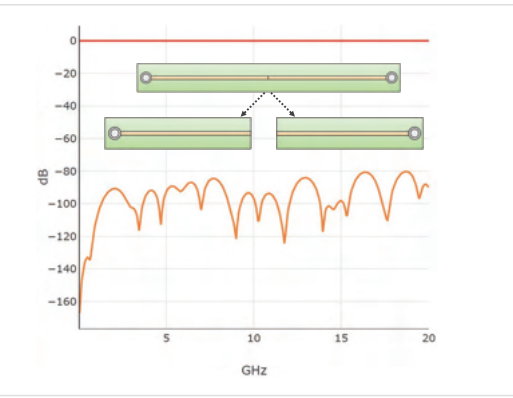
SnpView.com Easy, Fast and Accurate Channel Analysis on Web



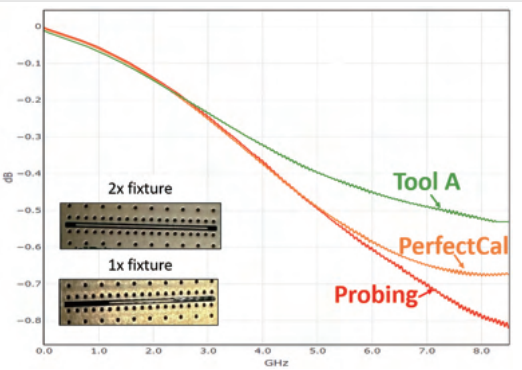
Architecture of the Snpview.com



Comparison of TDR accuracy
: Hardware TDR meter vs each solution's result



PerfectCal®
: Half gating from 2x thru fixture to 1x fixture.
: Support de-embedding function.



Comparison of characterization accuracy

- Probing result vs each solution's result
- 2x thru fixture: CPWG 10mm with FR4
- 1x fixture: CPWG 5mm with FR4
- Probe: GGB 250um GSG microprobe
- Instrument: Keysight 8GHz VNA

Efficient way for channel analysis

Usually, channel analysis is expensive and time-consuming. First of all, channel simulator and high-performance computing servers are needed for analysis. In addition, complicated analysis settings and long simulation times for channel analysis increase the development time of the system. Snpview.com is a web-based channel analysis solution that provides analysis results anytime and anywhere without the limitations of the computing environment.

- **Computing on the Snpview server**
- **Unnecessary for high performance PC**
- **Required only 'Chrome' or 'Edge' web browser**
- **Easy setup for channel analysis**

Fast and accurate time domain methods

More sophisticated techniques are required to conduct time-domain analysis using S-parameters. Snpview.com offers the following methods to maximize the efficiency and accuracy of time-domain analyses.

- **Band-limited S-parameter to causal time response**
  : Most of the S-parameters obtained through measurement or simulation are of limited bandwidth. Under these S-parameter conditions, the extrapolation method is applied to ensure the accuracy of transient simulation results. The extrapolation method developed by Huwin enables conversion to causal time response while maintaining the inherent characteristics of the band-limited S-parameter.
- **TDR and TDT**
  : Impedance and transmission in time-domain.
- **Fast eye-diagram estimation**
  : Fast and accurate estimation of worst-case eye-diagrams is possible using the channel system's step response and optimization algorithms.
- **Fast BER estimation**
  : Fast and accurate BER estimation are possible using the channel system's step response and statistical approach.
- **PerfectCal® : Thru fixture de-embedding**
  : Supporting an accurate half gating function for the thru-fixture structure. Therefore, the de-embedding of the fixture-DUT-fixture structure is possible.
- **Web SerDes channel simulation (2023. 3Q)**
  : The time domain simulation of SerDes channel with the accurate impulse responses, Tx/Rx EQ, jitter and noise.

Additional functions for user convenience

- **Heal function**
  : Supporting the function to enforce causality and passivity of S-parameter.
- **Sharing analysis results**
  : Sharing S-parameters and analysis results. An open link can be created and sent to other users.

TDR accuracy

PerfectCal

SnpView demo