

## Simberian News | November 10, 2009

...from Simberian Inc.

Welcome to the latest edition of Simberian News!

In this issue:

- 1) Start your next design with dielectric identification in Simbeor
- 2) What is new in micro-releases of Simbeor?

**1) Quality of electromagnetic models of interconnects depends on the quality of the dielectric models used in the analysis.** Non-dispersive or incorrect dielectric models lead to erroneous prediction of signal propagation in PCB interconnects and make even electromagnetic extraction useless (see more on that in [app note #2008\\_06](#)). Dielectric constant and loss tangent are typically available from manufacturers at one frequency point or without frequency specification at all. At the same time dielectric constant and loss tangent may change more than 20% over the frequency band of signal spectrum. Thus, any attempt of compliance analysis of high-speed interconnects must start with the extraction of the dielectric properties over the frequency band of interest. **A simple and accurate procedure for identification of broad-band dielectric parameters on the base of measured and simulated generalized modal S-parameters has been recently implemented in Simbeor 2008.01** (available with Level 1 license). The procedure uses SOLT calibrated S-parameters of two line segments and advanced electromagnetic model of a line segment ([click here to see the demo of the dielectric parameters identification](#)). Causal wide-band and multi-pole Debye models available in earlier versions of Simbeor were recently extended with the new broad-band dielectric models defined by mixture of two dielectrics to simplify identification of parameters for glass and epoxy dielectric mixtures for instance.

**2) Here is a list of some other features recently implemented in micro-releases of Simbeor 2008.01** ([click here to see the complete list](#)):

- Time-domain responses of multiports can be plotted as TDR/TDT graphs or as eye diagrams – [see demo-videos #2009\\_05, #2009\\_06 and #2009\\_07](#)
- Stimulus for time-domain analysis can be defined as a V(t) table for jitter de-embedding – see more on that at [http://kb.simberian.com/browse\\_item.php?id=300](http://kb.simberian.com/browse_item.php?id=300)
- Passivity, reciprocity and symmetry measures can be now plotted on graphs
- Different normalization impedances can be defined for different ports for PDN+SI problems – see more on that at [http://kb.simberian.com/browse\\_item.php?id=148](http://kb.simberian.com/browse_item.php?id=148)
- Polygonal discontinuity selectors and automatic port creation for component pins are added in de-compositional analysis of imported PCB geometries – [see demo-videos #2009\\_05, #2009\\_06 and #2009\\_07](#)

**One of our customers says - "I was very happy with the correlation I was able to achieve. I was also surprised at how quickly I was able to get that correlation."** [Click here to see what licensing option of Simbeor 2008.01 fits your needs.](#) [Download and try Simbeor today](#), or let us know if you would like to have an overview and demo of Simbeor 2008.01 at your company site or over the webex.

Sincerely,  
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