XPEEDIC
ACCELERATE YOUR IC DESIGN

ViaExpert

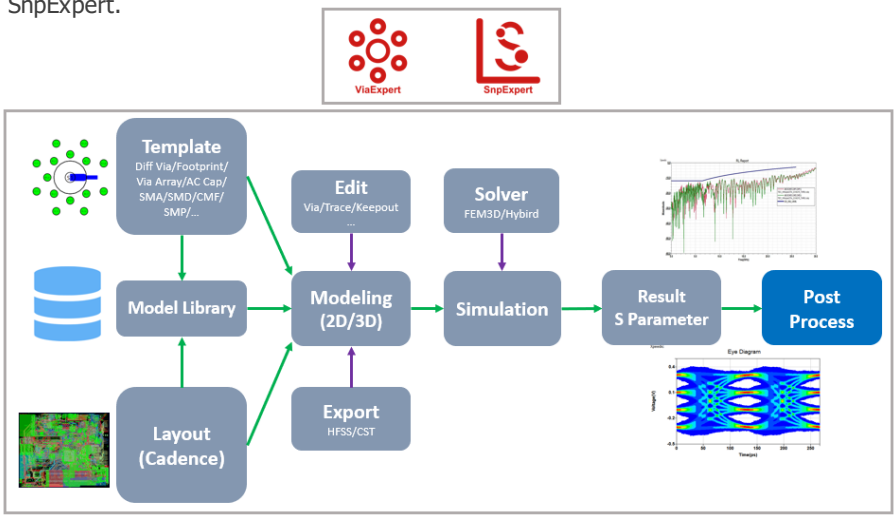
Fast and Accurate Via Modeling and Simulation

Highlights

1. Via discontinuities in signal paths have significant impact on signal integrity for high speed designs. A quick way to build via models and then simulate them is essential for SI engineers. ViaExpert is made specially for this purpose.
2. To quickly build via models, ViaExpert provides multiple ways including built-in templates, direct layout file import, and a combined flow which takes advantage of both the layout trace breakout and built-in templates.
3. To quickly simulate models, ViaExpert deploys two solver technologies, one is a Finite Element Method (FEM) solver, and the other is a hybrid one. Both adopt distributed processing and multi-core parallelization, which adds another level of acceleration.
4. Auto port generation simplifies EM analysis setup.
5. Parametric sweep and optimization help to achieve design convergence.
6. ViaExpert provides export to HFSS for quick benchmarking purpose.

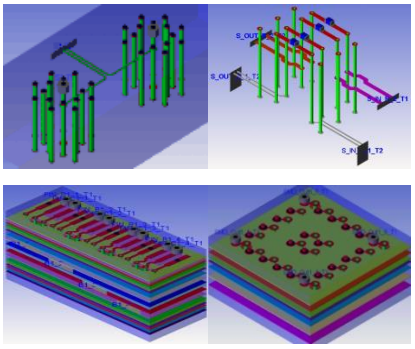
Via Modeling and Simulation in ViaExpert

- Three ways to quick create via model : Modeling from Template ; Modeling from Layout ; Modeling from Library, which is mixed with layout and template model.
- Two solvers :FEM3D solver; Hybird solver , which is faster than FEM3D solver and good for parametric and optimization analysis.
- Easy to edit model, export to third-party projects and explore s parameter in SnpExpert.



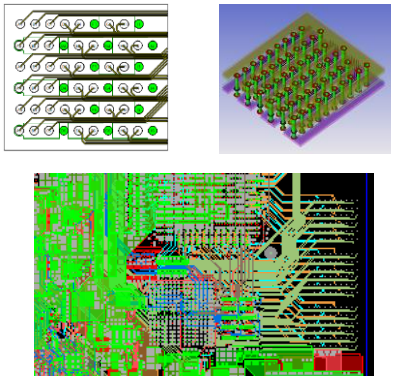
Modeling from Templates

Constructing via related CAD models is hard and time-consuming. ViaExpert's built-in templates come to the rescue.



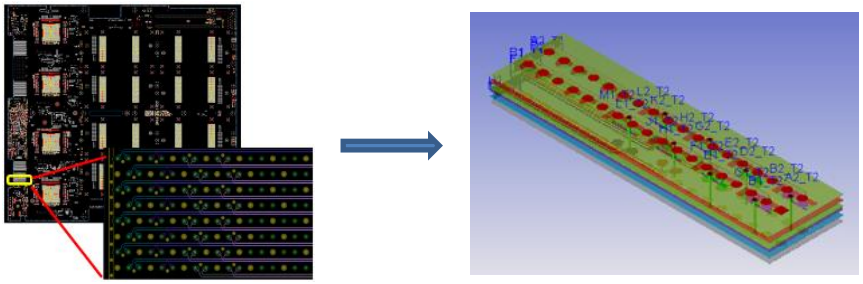
Modeling from Layout

Board or package layout import is made easy. Modifications, tuning, and optimization? Available too!



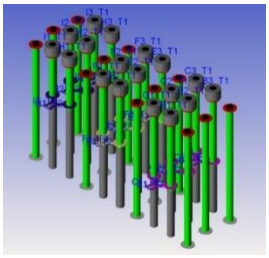
Modeling from Library

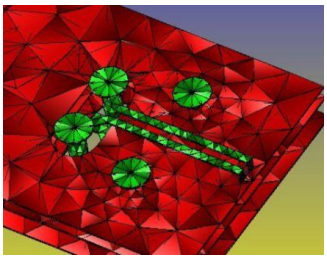
Want to combine footprint & routing from a board with custom design? No problem!



3D Model, Flexible Mesh, and Powerful Solvers

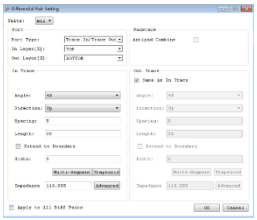
- 3D CAD model from templates or PCB layout or combined flow
- Automatic 3D tetrahedral mesh
- Fast 3D FEM solver and hybrid one for even faster simulation



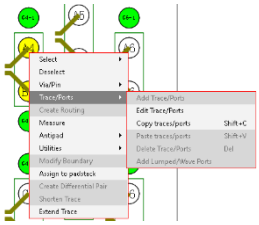


Via and Trace Edit in Model

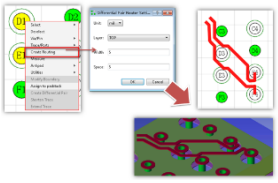
- Create/edit/delete differential traces easily
- Via parameters such as anti-pad shape and size can be easily edited
- Auto ports on traces or pins
- Built-in backdrill or non-functional pad removal option



Differential Pair Settings



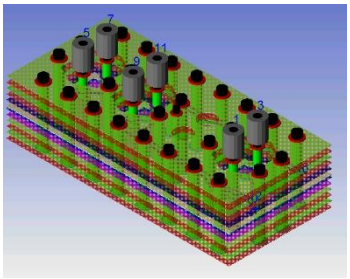
Via Editing in Model

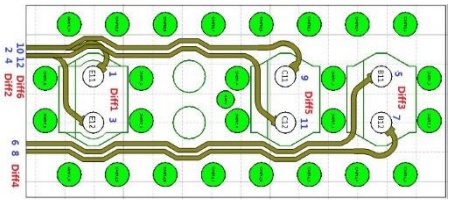


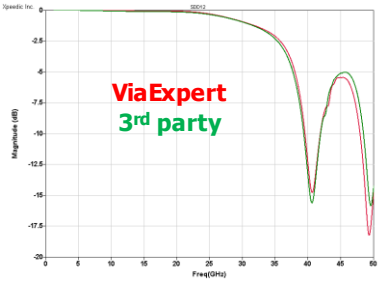
Manual routing for differential traces

Benchmark (DC-50GHz)

- ViaExpert can cut PCB directly and create 3D model in seconds.
- ViaExpert's result agrees well with 3rd party tool.







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