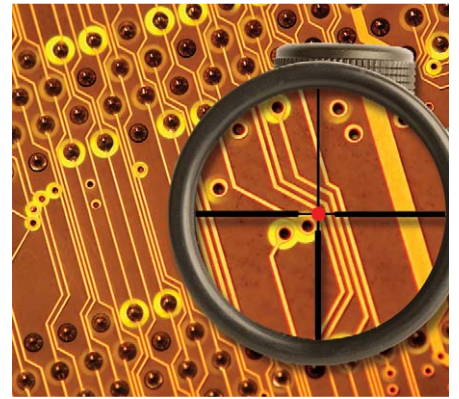


OVERVIEW

As wireless-enabled devices boast more and more features, you're faced with the daunting challenge of integrating them all within an unyielding footprint — without sacrificing time-to-market. That means you'll need to factor high-frequency electromagnetic (EM) simulation into the design flow from the beginning rather than for back-end verification. AXIEM™ EM software makes this possible for the first time. It was developed specifically for 3D planar applications such as RF printed circuit boards (PCBs) and modules, as well as LTCC, MMIC, and RFIC designs. AXIEM is valuable as a stand-alone EM solver, but it truly comes into its own when integrated within the Microwave Office® design environment, where it interacts with overall circuit and system simulation, layout, and verification through AWR's proprietary Unified Data Model™. Either way, you can now perform EM analysis early in the design cycle, where its capacity, accuracy and speed can save you precious time — and money.

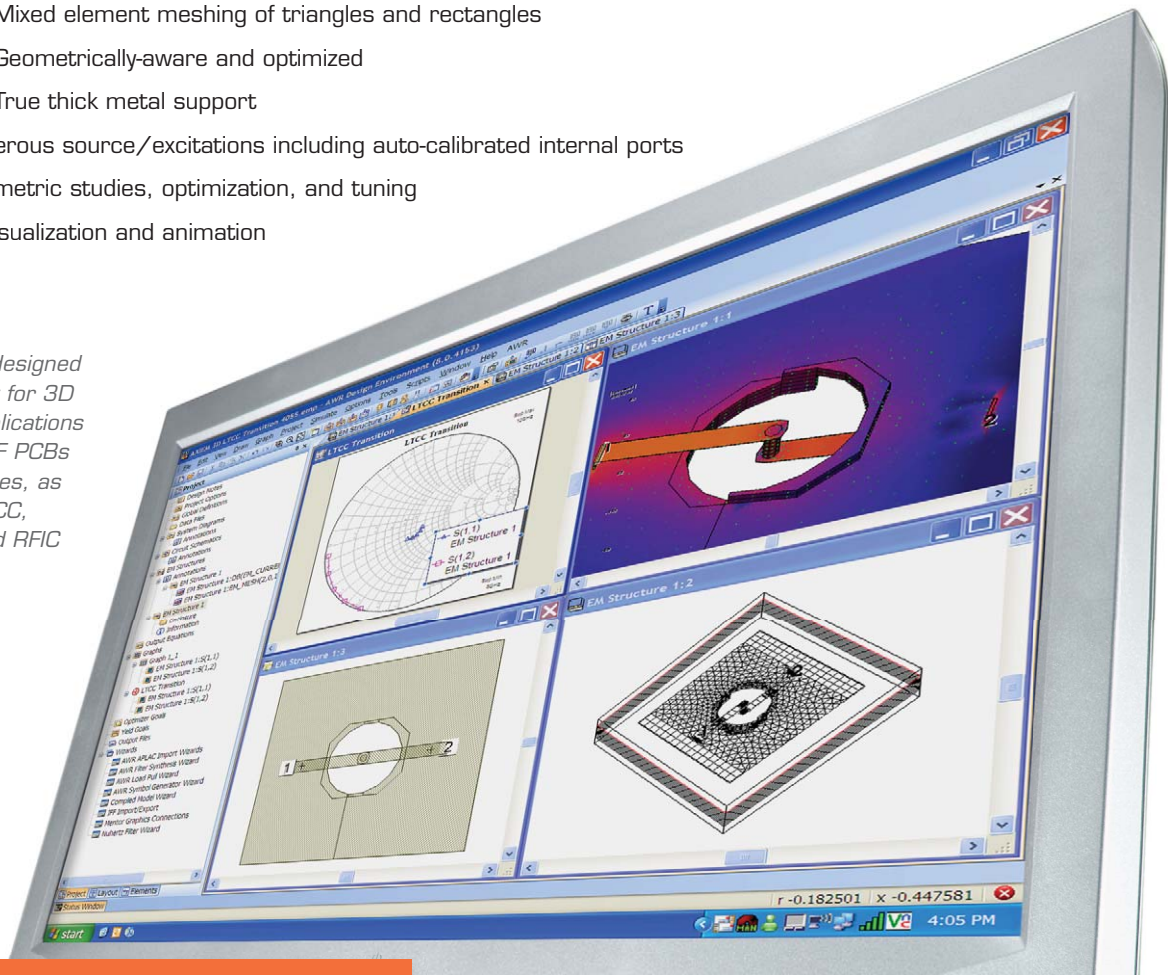


High-Frequency
EM Simulation
That's Fast Enough
for Upfront Design

FEATURES AT A GLANCE

- ◀ Seamless integration with Microwave Office and Analog Office® software
- ◀ Proprietary full-wave planar EM solver technology
 - Open-boundary method of moments (MoM) approach
 - Unconstrained capacity exhibited by $N \cdot \log(N)$ solver scaling
 - Unconstrained line width versus thickness ratio
 - Robust results from DC to daylight
- ◀ Advanced hybrid meshing technology
 - Mixed element meshing of triangles and rectangles
 - Geometrically-aware and optimized
 - True thick metal support
- ◀ Numerous source/excitations including auto-calibrated internal ports
- ◀ Parametric studies, optimization, and tuning
- ◀ 3D visualization and animation

AXIEM is designed specifically for 3D planar applications such as RF PCBs and modules, as well as LTCC, MMIC, and RFIC designs.



THE ELEGANCE OF AXIEM

AXIEM technology is an open boundary, non-gridded, MoM solver that supports true thick metal in layered dielectric media. It incorporates the most recent advancements in EM solver technology, meshing algorithms and software architecture to deliver unprecedented speed and accuracy. You'll find its exceptional performance becomes more and more evident as your design grows more complex and unknowns increase.

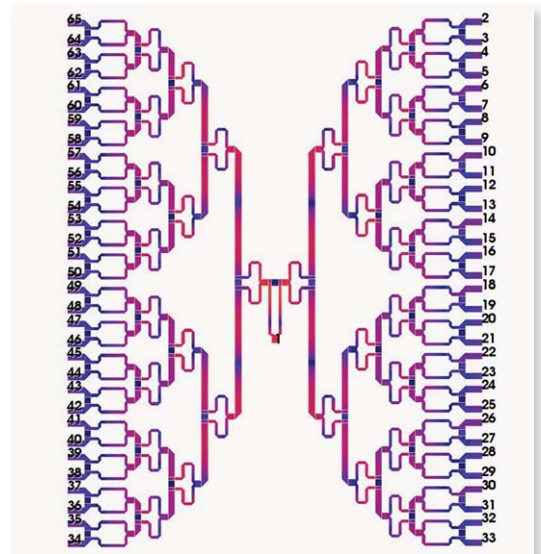
Unique Solver Technology 3D planar solvers that rely on the Sommerfeld (or similar) integral formulations are often fast for small- to medium-size problems, but suffer from accuracy and dynamic range limitations and require excessive simulation time for large problems. AXIEM overcomes these limitations with best-in-class accuracy, dynamic range, capacity, and speed. The AXIEM solver scales as $N \cdot \log(N)$, which dramatically reduces simulation time and allows simulation of much larger problems than previously possible.

AXIEM's solver technology also enables accurate and robust simulations down to DC, which is essential for obtaining the right bias conditions and setting the DC operating points for active structures. The integrity of these broadband results mitigates design issues associated with using "DC to daylight" results in subsequent harmonic balance or transient simulations performed within Microwave Office or Analog Office environments.

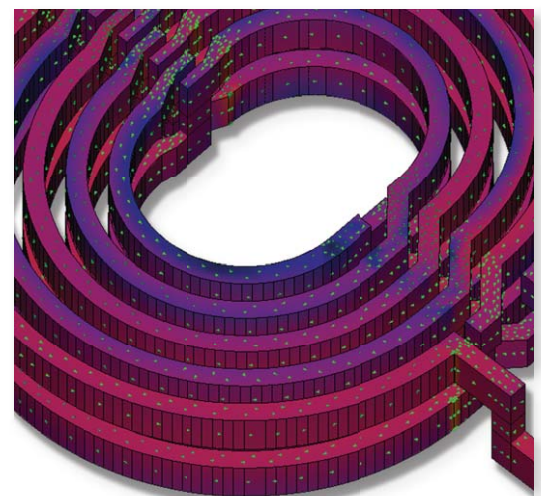
Advanced Meshing Technology AXIEM's hybrid meshing technology automatically fractures structures with triangular and rectangular elements and is optimized to maximize accuracy with minimal unknowns, including intelligent automatic geometric de-featuring. This heuristic approach extends the capacity of AXIEM beyond what you can achieve with traditional single-element approaches and makes it well-suited for large RF designs. AXIEM's "thick metal" capability is also essential for successful solution of 90 nm and 65 nm RF CMOS problems in which line thickness is often in parity with line widths.

SUMMARY

AXIEM's capacity, accuracy, and speed will transform your design flow by bringing EM analysis to upfront diagnostic design. It's just what you need to identify design problems early, when it's much more cost- and time-efficient to address them.



AXIEM can solve this complex 65 port Wilkinson divider in just a few minutes.



Spiral inductor 3D current flow.



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