

# ANSYS HFSS

*ANSYS simulation technology enables you to predict with confidence that your products will thrive in the real world. Customers trust our software to help ensure the integrity of their products and drive business success through innovation.*

## Industry Standard Full Wave, Electromagnetic Field Simulation

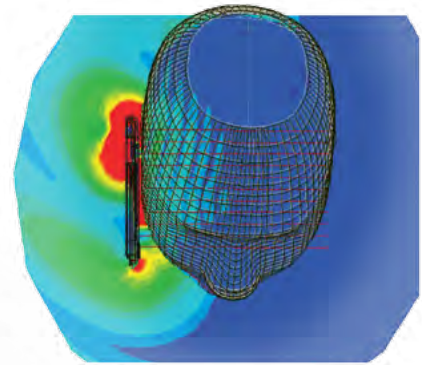
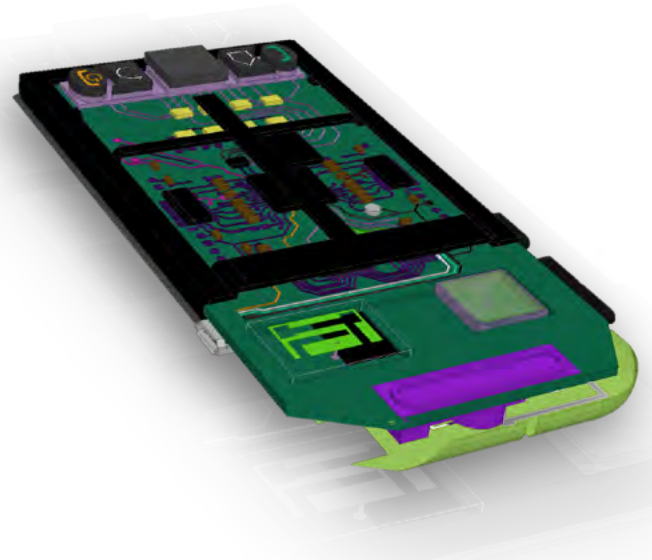
HFSS sets the gold-standard for accuracy, advanced solver and high-performance computing technology, making it the 'go to' tool for engineers designing high-frequency and high-speed electronics found in communication systems, radar systems, satellites, smart phones and tablet devices.

## Rigorous Validation

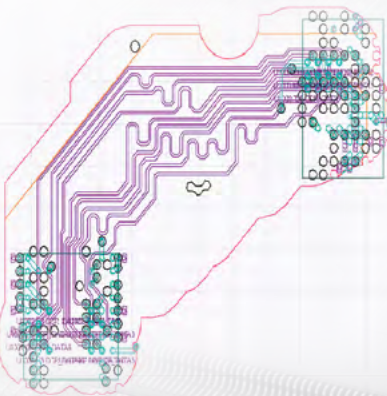
Sign-off quality high-frequency EM results that allow customers to simulate and go straight to manufacturing. With HFSS, engineers can extract parasitic parameters (S, Y, Z), visualize 3D electromagnetic fields (near- and far-field) and generate Full-Wave SPICE™ models that link to circuit simulations.

## Easy to Use, Versatile and Fast

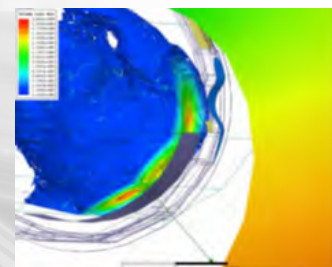
Features such as automatic adaptive meshing, versatile design entry and advanced high-performance computing technology put analyst-quality solvers in the hands of the designer.



*Vortis engineers reduced the time required to customize the antenna design for a specific phone by up to 90 percent using ANSYS HFSS.*



*Ooma saved 50 cents on each of hundreds of thousands of devices by using ANSYS HFSS and other ANSYS solutions to design a DDR3 subsystem that does not require a termination voltage regulator.*



*Synapse Product Development used HFSS and the ANSYS human body model to evaluate the performance of various antenna designs by modeling the complete system, including the wireless device and antenna and their interactions with the human body.*

## High Frequency Electromagnetics

- Frequency and Time Domain Analysis
- Eigenmode
- 2.5D and 3D Method of Moments
- Hybrid Finite Element/Method of Moments
- Direct and Iterative Matrix Solvers
- Physical Optics

## Geometry Entry

- 3-D Modeler
- 3-D Electrical Layout
- 3-D CAD import

## Excitations and Boundary Conditions

- Modal Wave Port Excitation
- Lumped, Voltage and Current Excitations
- Floquet Excitations
- Incident Wave Excitation
- Magnetic Ferrite Bias Excitation
- Terminal Solutions
- Perfect Electric and Magnetic Boundary
- Finite Conductivity Boundaries
- Lumped RLC Boundary
- Symmetry Boundary
- Periodic Boundary

## Meshing & Element Technology

- Automatic, Adaptive Mesh Refinement
- Higher and Mixed order Elements
- Curvilinear Elements

## Advanced Material Modeling

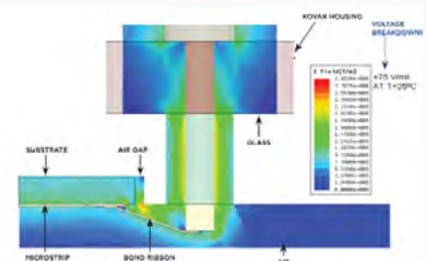
- Frequency Dependent Materials
- Anisotropic material tensors
- Saturated ferrite material

## Advanced Material Modeling

- HPC Frequency Sweeps
- Multithreading Spectral Decomposition Method

### ANSYS Multiphysics solutions

help cross-functional engineering organizations predict the performance of complex products influenced by multiple physics and improve their designs through simulations of the interactions between physics.



Raytheon engineers used ANSYS HFSS to compute the full electromagnetic field structure of a microwave antenna, and then coupled the HFSS model to ANSYS Mechanical to perform a transient thermal simulation.

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