Ansoft HFSS - User Guide

Welcome to Ansoft HFSS



What is HFSS?

- HFSS is a high-performance full-wave electromagnetic(EM) field simulator for arbitrary 3D volumetric passive device modeling that takes advantage of the familiar Microsoft Windows graphical user interface. It integrates simulation, visualization, solid modeling, and automation in an easy-to-learn environment where solutions to your 3D EM problems are quickly and accurately obtained. Ansoft HFSS employs the Finite Element Method(FEM), adaptive meshing, and brilliant graphics to give you unparalleled performance and insight to all of your 3D EM problems. Ansoft HFSS can be used to calculate parameters such as S-Parameters, Resonant Frequency, and Fields. Typical uses include:
 - Package Modeling BGA, QFP, Flip-Ohip
 - PCB Board Modeling Power/Ground planes, Mesh Grid Grounds, Backplanes.
 - Silicon/GaAs Spiral Inductors, Transformers
 - EMCEMI Shield Endosures, Coupling, Near- or Far-Field Radiation
 - Antennas Mobile Communications Patches, Dipoles, Horns, Conformal Cell Phone Artennas, Quadratilar Helix, Specific Absorption Rate(SAR), Infinite Arrays, Radar Cross Section(RCS), Frequency Selective Surfaces (FSS)
 - Connectors Coax, SFP/XFP, Backplane, Transitions
 - Waveguide Filters, Resonators, Transitions, Couplers
 - Filters Cavity Filters, Microstrip, Dielectric
- HFSS is an interactive simulation system whose basic mesh element is a tetrahedron. This allows you to solve any arbitrary 3D geometry, especially those with complex curves and shapes, in a fraction of the time it would take using other techniques.
- The name HFSS stands for High Frequency Structure Simulator. Ansoft pioneered the use of the Finite Element
 Method(FEM) for EM simulation by developing implementing technologies such as tangential vector finite elements,
 adaptive meshing, and Adaptive Lanczos-Pade Sweep(ALPS). Today, HFSS continues to lead the industry with
 innovations such as Modes-to-Nodes and Full-Wave Spice™.
- Ansoft HFSS has evolved over a period of years with input from many users and industries. In industry, Ansoft HFSS is the tool of choice for high-productivity research, development, and virtual prototyping.

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