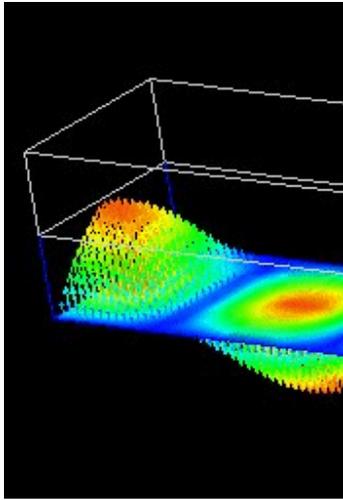


Electromagnetic Design System (EMDS)



Note: EMDS standalone was superseded by [Electromagnetic Professional \(EMPro\)](#).

If you are using Advanced Design System (ADS), note that certain ADS bundles (i.e. pre-configured combinations of software targeted to a specific design workflow) include the [W2342 Keysight FEM Simulator Element](#).

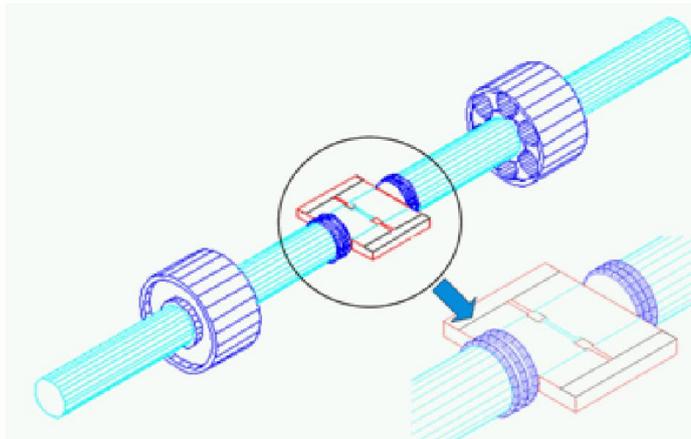
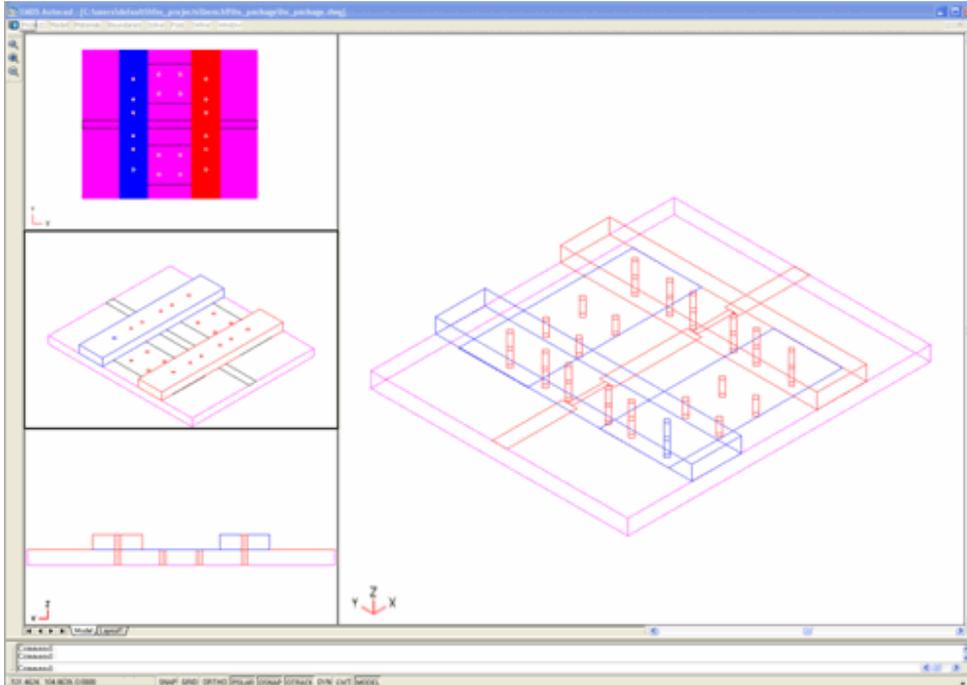
Electromagnetic Design System (EMDS) is a complete solution for electromagnetic simulation of arbitrarily-shaped, passive three-dimensional structures.

It makes full 3D EM simulation an attractive option for designers working with RF circuits, MMICs, PC boards, modules, and Signal Integrity applications. It provides the best price/performance, 3D EM simulator on the market, with a full 3D electromagnetic field solver, a modern solid modeling front-end, and fully automated meshing and convergence capabilities for modeling arbitrary 3D shapes such as connectors, machined parts, components, bond wires, antennas, and packages.

EMDS also comes with integration into Keysight's Advanced Design System (ADS), giving RF and microwave engineers access to the most comprehensive EM simulation tools in the industry.

Product Information

Developed with designer of high-frequency/high-speed circuits in mind, Electromagnetic Design System (EMDS) offers a powerful finite-element EM simulator that solves a wide array of applications with impressive accuracy and speed.



Key Features and Benefits

Electromagnetic Design System (EMDS) comes with a list of impressive features. These key technological enablers demonstrate the advantages of full 3D EM design and verification:

- Arbitrarily shaped 3D passive structures for generalized EM analysis.
- Conductors, resistors, isotropic and anisotropic dielectrics, isotropic and anisotropic linear magnetic material modeling allow a wide range of application coverage.
- An unlimited number of ports, which enables simulating multi-I/O design applications such as packages.
- Electric and magnetic fields modeling, allowing visualization of EM fields in a design.
- Absorbing boundary condition (free space), allowing antenna modeling.
- Full-wave, EM-accuracy for first-pass design success.

- Multi-Mode impedance and propagation constants that overcome single-mode modeling limitations in many other EM modeling tools.
- Antenna parameters (gain, directivity, polarization, and so on), to allow better insight into antenna design.
- An EMDS/ADS link, providing an integrated approach to EM/Circuit design.

Application Areas

EM modeling tools are known for their great accuracy. Keysight Electromagnetic Design System (EMDS) redefines this term with broad application coverage, from machined waveguide components to micron-level circuits, including the following:

- Microstrip, stripline, CPW elements (filters, couplers, spiral inductors, via holes, air bridges, meander lines...)
- Multilayer structures
- Launches/transitions (coax-to-microstrip, microstrip-to-stripline)
- Ceramic filters
- Surface-mount components
- Waveguide filters
- Adapters/transitions
- Antennas
- Couplers
- Power splitters/combiners
- Connectors
- Mode converters
- Finline discontinuities

EMDS is available either as a stand-alone tool, or integrated into Advanced Design System (ADS).