



Agilent EEs of EDA Antenna Modeling Design System

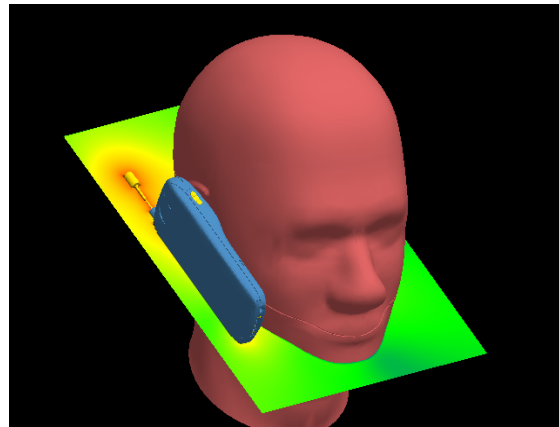
**The Complete Antenna Modeling and Design System
Based on Full-Wave Electromagnetic Simulation
Technology**

Software dedicated to the design of antennas and antenna systems

Preliminary Technical Overview

Introducing Antenna Modeling Design System (AMDS), a 3-D, dedicated design and modeling tool for antennas and antenna systems.

With AMDS, full-wave EM simulations that used to take weeks can now be performed in just a few hours. AMDS can verify a mobile phone antenna system in less time than it takes to complete a product design review and eliminates the need for physical prototyping early in the design flow.

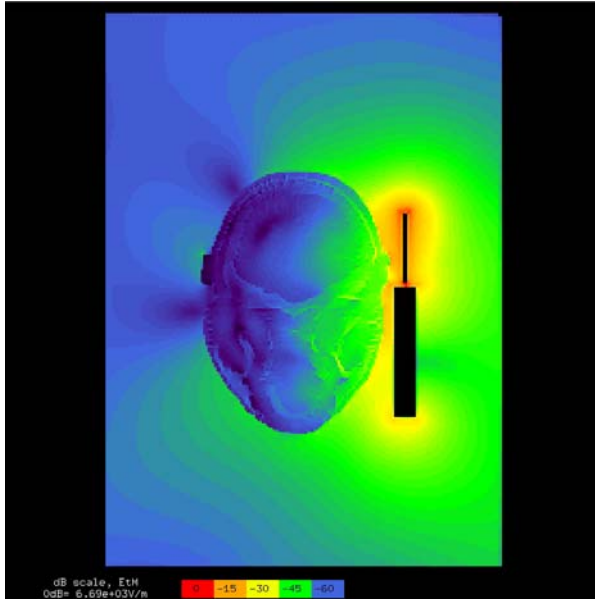


Whether it's for a mobile phone, a wireless appliance, or for any other antenna design requirement, AMDS is tailored just for antenna design applications and provides the needed level of accuracy that will speed your design to the marketplace and save you the considerable expense that goes into multiple design spins. Whether you're a focused antenna designer, or an RF engineer doing antenna work as part of your design responsibilities, you already know how difficult, time consuming, and frustrating it can be to perform Multi-Input Multi-Output (MIMO) antenna systems.

AMDS will speed up the design process and will help you design a better product, such as better voice quality or a tighter geometry for mobile phones. With the capability to model all wireless standards, including 3G/4G, GSM, GPRS, EDGE, W-CDMA, 1xEV, and CDMA-2000, AMDS is the only tool you need to address all your multi-standard antenna system simulation needs.

Empowering Technology: A Full-Wave Three-Dimensional EM Solver based on the Finite Difference Time Domain Method (FDTD)

Utilizing Finite Difference Time Domain (FDTD) technology, AMDS is ideally suited for antenna design for wireless appliances that are constrained by mechanical design priorities. In addition, AMDS easily integrates with mechanical CAD tools such as Parametric Technologies' Pro/Engineer, so you can import your complete mechanical prototype file with ease. And because AMDS has a big powerful engine that can mesh an entire environment, it can mesh a cell phone in combination with the person, the complete antenna system, and the device's intended operational environment.



A 3-D view of head/handset geometry

AMDS Feature Highlights

- Time-domain analysis provides results for a wide band of multiple frequency points in a single computation
- Data available in frequency and time domain to better optimize launches and transitions
- Impedance, antenna patterns, system and radiation efficiency, Standing Wave Ratio (SWR), S-parameters, Specific Absorption Rate (SAR), radar cross section, antenna gain, coupling, and diversity for EM analysis of complete systems

Multi-threaded Simulation Technology

- Multi-core (shared memory) simulation support
- Multi-node (distributed memory) simulation support

Bio-EM Capabilities

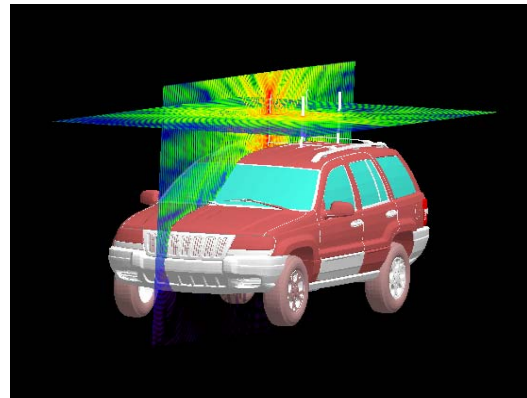
- SAR with 1- and 10-gram averages, whole body average, locate peak SARs
- Follows protocol of latest C95.3 standard, for the most up-to-date analysis.
- Temperature rise in human body
- Specific Anthropomorphic Mannequin (SAM) head for SAR for meeting FCC specifications
- Manual/automatic partial volume SAR

Features for a variety of architectures, from designing a single antenna to more complex, multi-mode antenna systems

Feature Highlights

CAD Import/Export formats support the most popular programs available today

- SAT Files
- STEP Files
- IGES Files
- Pro-E Files



Space-diversity vehicle antenna system on a CA-imported model

Simulation Engine Features

Materials

- Lossy Dielectric/Magnetic
- Frequency-Dependent Dielectric/Magnetic
- Anisotropic Magnetized Ferrite
- Anisotropic Dielectric (Full Tensor)
- Thin Wires with Different Radii
- Non-linear Dielectric
- Non-linear Magnetic

Sources/Loads/Ports

- Voltage/Current Sources with Series/Parallel RLC
- Passive/Active Ports
- Non-Linear Capacitors
- Static Solver for Initial Condition Charging
- Time-controlled On/Off Switches
- Multi-Port S-parameters vs. Frequency
- Multi-Port S-parameters – Steady State
- Port Impedance vs. Frequency
- Port Impedance – Steady State
- Incident Plane Wave
- Gaussian Beam
- VSWR

Far Zone Data

- Transient Far Zone – Specific Angles
- Steady State Far Zone Patterns
- Circular Polarization
- Radar Cross Section
- 3D Far Zone Patterns

Special Capabilities

- Lia, PMC, PEC Outer Boundaries
- Automatic Convergence Check for Optimum Run Times
- PML Outer Boundaries with Adjustable Thickness
- Threaded Multiprocessor (shared memory)
- MPI Multiprocessor (Distributed Memory Clusters); Add-On

Biological Calculations

- Specific Absorption Rate (SAR)
- Calculate 1 and 10 grams SAR Averages Per C95.3
- Whole Body SAR Average
- Location of Peak SARs
- Adjust SAR Levels for Specified Input Power
- Planes of SAR for Color Display
- SAM Head CAD file

Geometric Modeling Features

Geometry Generation

- Dimension-Based 3D Solid Modeler
- Dimension-Based 2D Modeler
- Copy-Move-Scale-Rotate
- 3D Rectangular Arrays of Objects
- 3D Polar Arrays of Objects
- Shells Solid Objects
- Boolean Operations
- Mesh View/Edit
- Sweep/Rotate/Bodies of Revolution
- 2D Scripting/Macros

CAD Import/Export

- Import SAT Files
- Import STEP Files
- Import IGES Files
- Import Pro-E Files
- Scale/Position Imported Objects
- Selective Import of Multiple Objects in CAD File
- Export SAT Files
- Export STEP Files
- Export IGES Files

Meshing/Viewing

- Fast Meshing Algorithm (FMA)
- Automatic/Manual Control of Mesh Parameters
- Fast 3D Mesh Viewing

Post-Processing

- Color Display of 2D Fields/Currents
- Color Display of 2D Steady State E, B Fields
- Color Display of 3D Steady State Surface Currents
- Color Display of 2D SAR Values
- Export Geometry/Field Display to Bitmap File
- “Movie Sequence” of Transient Fields vs. Time
- Export “Movie Sequence” as an MPEG File
- Near Zone Fields/Currents vs. Time
- Impedance, S-parameters vs. Frequency
- Plot results from other AMDS Projects
- Export Plots to Postscript Files
- Polar Plot Antenna Patterns
- Smith Chart Impedance Plots
- FFT of Transient Results

World-class support, training, and services

All Agilent EEsof EDA products are backed by a world-class team of experienced application and technical support engineers who are dedicated to providing the right software, support, and consulting solutions to increase engineering productivity and long-term success. We offer worldwide, local-language, technical support via telephone, fax, e-mail, and the worldwide web.

In addition, our web-based Agilent EEsof Knowledge Center is an around-the-clock resource for comprehensive support information and downloadable examples for all our products. It hosts software updates and has a tracking feature that makes it easy for you to submit and manage support cases and related enhancement requests. The search feature lets you quickly find available solutions and sort through them by date, popularity, or user ratings. The Knowledge Center also contains product discussion forums that put you in touch with other users, support engineers, and product developers. And, you can get training when and where you want it through e-learning short courses and technical information sessions.

Every team's design flow has aspects that are unique. To save time and get individual attention focused on your application, take advantage of our consulting solution services. We offer complete consulting in MMIC, RFIC, board/module, or system-level design.

Contact your Agilent EEsof EDA field sales engineer for more information about AMDS or for a free evaluation.

For more information about Agilent EEsof EDA, visit:

www.agilent.com/find/eesof

For more assistance with your test and measurement needs visit:

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