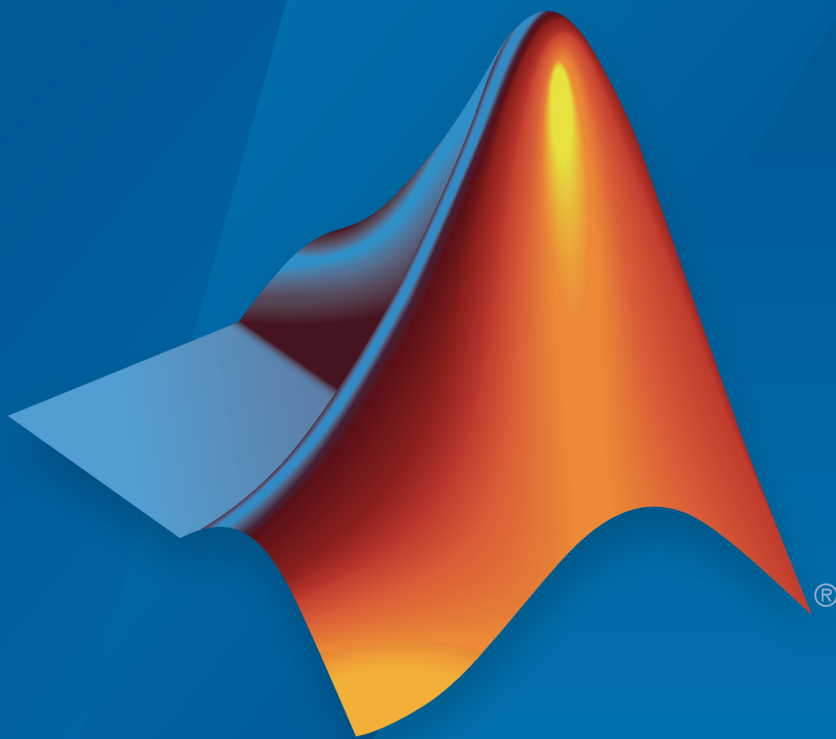


Antenna Toolbox™ Release Notes



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Antenna Toolbox™ Release Notes

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R2016a

Version: 2.0

New Features

Dielectric Modeling: Account for the effects of the substrate in antennas and finite antenna arrays

Design and analyze patch, cavity, and reflector antenna or array structures by using dielectric material as substrates. Characterize dielectric substrates using the `dielectric` utility function and the constants and properties listed in `DielectricCatalog`.

Import Antenna Arrays as a Planar Mesh: Design antenna arrays with custom planar geometries

Use the `customArrayMesh` class to design a planar array object. Analyze the custom mesh array for its port, surface, and field characteristics using array analysis functions.

Conformal Antenna Arrays: Position the antenna elements of an array at arbitrary position

Design conformal antenna arrays using any antenna elements from Antenna Toolbox™ as unit cells. You can also specify an array of any shape and antenna arrangements. Analyze unit cells of the array and extract the embedded pattern using array analysis functions.

Multi-Axis Tilt Property for Antennas and Antenna Arrays: Rotate an antenna or an array around any arbitrary axis

Use the `TiltAxis` property to rotate the antenna and array elements around any arbitrary axis.

Polar Plot: Interactively visualize the radiation pattern and perform measurements using `polarpattern`

Use the `polarpattern` function to plot antenna and array characteristics in polar coordinates. In the polar plot, you can:

- Use markers to enable measurements of the plotted data
- Visualize N -dB beamwidth
- Change the orientation of the data

Custom Pattern and Field: Visualize any arbitrary 3-D radiation pattern data or electric/magnetic field data using `patternCustom` and `fieldsCustom`

Use the `patternCustom` function to plot and visualize 2-D or 3-D radiation patterns from user specified or lab-measured antenna data recorded in CSV, text, or MAT files.

Use the `fieldsCustom` function to plot and visualize electric or magnetic fields from user specified or lab-measured antenna data recorded in CSV, text, or MAT files.

Radiation Pattern Import/Export: Import and export radiation pattern data using the MSI file format with `msiread` and `msiwrite`

Use the `msiread` function to read data from MSI files that have `.msi` or `.pln` extensions. Use the `msiwrite` function to write data into MSI files that have `.pln` extension.

Rectangular Horn and Waveguide Antennas: Design, visualize, and analyze rectangular horn and waveguide antennas with parameterized geometry

Use the `horn` and `waveguide` antennas class to design and analyze a rectangular horn and waveguide antennas, respectively. To view the structure of horn or waveguide metal antennas, use the `show` function.

R2015b

Version: 1.1

New Features

Infinite Array Object: Analyze a library antenna as a unit cell in an infinite array

Design infinite antenna arrays using antenna elements from Antenna Toolbox as unit cells. Use array analysis functions to analyze unit cells of the array and extract the embedded pattern.

Custom Planar Mesh Object: Import an arbitrary 2-D mesh to describe a custom antenna

Use the customAntennaMesh class to design a planar antenna object. Use the antenna analysis functions to analyze the custom mesh antenna for its port, surface, and field characteristics.

Infinite Ground Plane Specification: Model an infinite ground plane for antennas connected to the ground

Analyze and visualize properties of antenna connected to the ground plane, such as patch, monopole, and pifa in the presence of an infinite ground plane.

E-H Field Visualization: Inspect the electric and magnetic fields at an arbitrary distance from the antenna

Use EHfields to visualize the electric and magnetic fields of an antenna element in Antenna Toolbox.

Biquad Antenna Object: Design, visualize, and analyze biquad antennas with parameterized geometry

Use the biquad antenna class to design and analyze a biquad metal antenna. Use the show function to view the structure of the biquad metal antenna.

R2015a

Version: 1.0

New Features

Antenna library for rapid design and visualization of metal antennas using parameterized geometry

Design and analyze the structure of 22 metal antennas including dipoles, monopoles, spirals, and patches. Use the show function to view the structure of the metal antennas.

Antenna array design using antenna elements

Use the Antenna Toolbox library of antenna elements to design linear and rectangular antenna arrays. Use the layout function to view the placement of the different antenna elements in the array.

Port analysis of antennas and antenna arrays

Analyze the ports of different antennas and antenna arrays using impedance, returnLoss, and sparameters functions.

Field analysis of antennas and antenna arrays

Analyze and visualize the radiation pattern, E-H fields and beamwidth of different antennas and antenna arrays using pattern, EHfields, patternAzimuth, patternElevation and beamwidth functions.

Surface analysis of antennas and antenna arrays

Determine, visualize and analyze the surface charge and current of different antennas and antenna arrays using charge, and current functions.

Antenna array analysis for the embedded element pattern and the correlation coefficient of the elements of the array

Determine, analyze, and visualize the embedded element pattern and the correlation coefficient of elements in an array using pattern, and correlation functions.

Infinite ground plane specification for analyzing balanced antennas

Analyze and visualize balanced antenna properties, such as, dipoles and bowties in the presence of an infinite ground plane.