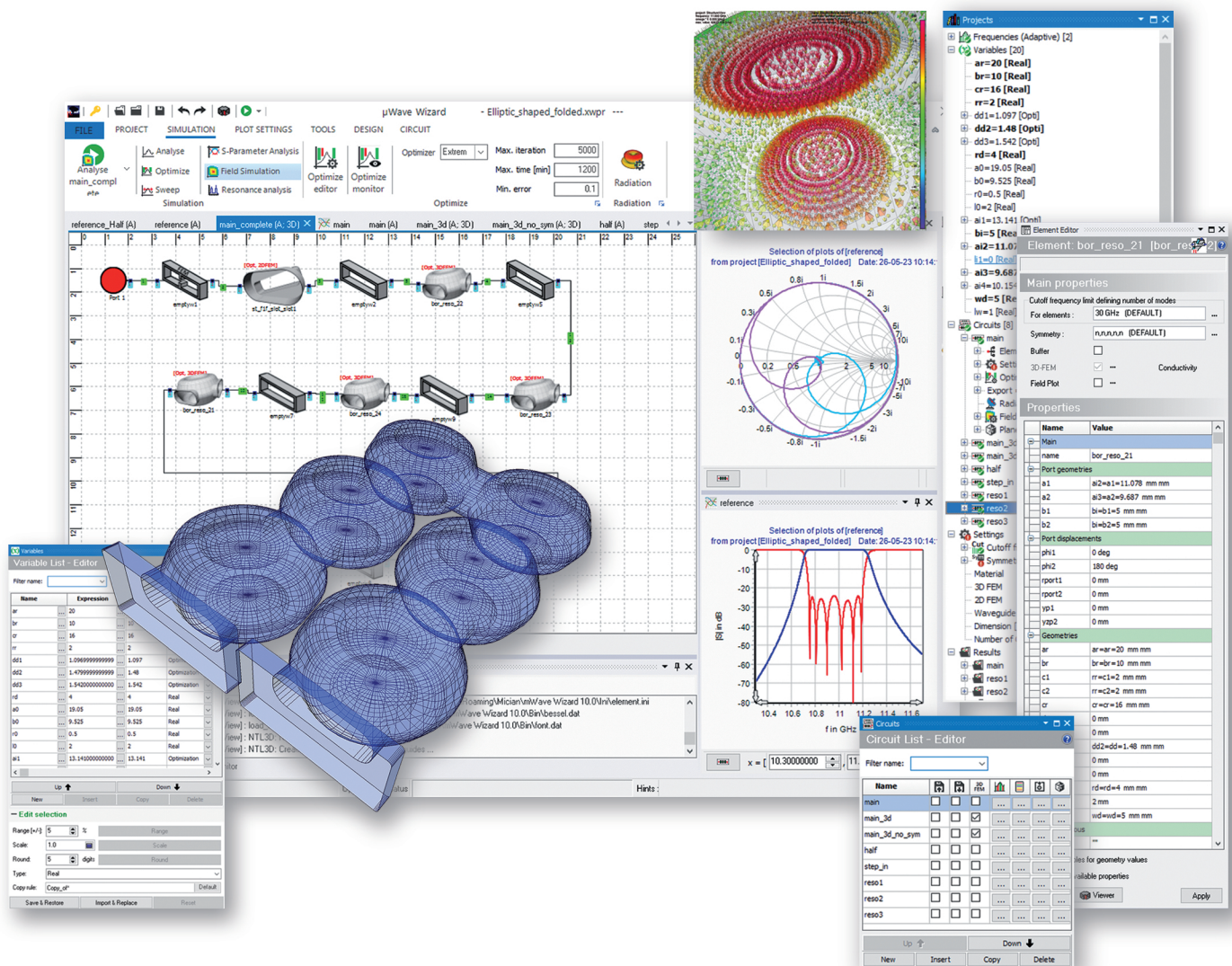# MiCIAN
# µWave Wizard™

Empowering Your Microwave Design Experience

Introducing µWave Wizard™ 2023 (v 10.0)

µWave Wizard is a powerful software suite designed specifically for microwave circuit and antenna simulation. It enables engineers and researchers to accurately analyze and optimize their designs, leading to faster development cycles and superior performance. The latest version, 10.0, comes with significant enhancements to both the user interface (UI) and the simulation core, providing a more intuitive and efficient experience.

- Introducing a New User Interface: Experience a sleek and intuitive UI that enhances your productivity. Enjoy the flexibility of dockable windows, allowing you to effortlessly arrange schematic editors, plot windows, dialogs, and editors according to your preferences. With the ability to place plots and schematic editor windows side by side, you can easily compare and analyze your designs.

- Modernized Schematic Editor: Our revamped Schematic Editor boasts enhanced routing capabilities, ensuring smoother and more efficient design workflows. The majority of symbols now feature 3D representations of discontinuities, providing a more realistic view of your designs. Additionally, the modeler symbols accurately depict the real model, enabling more precise modeling and analysis.
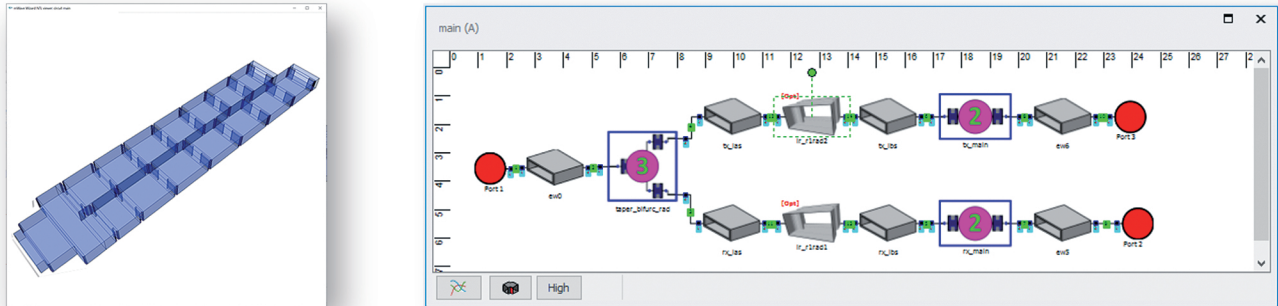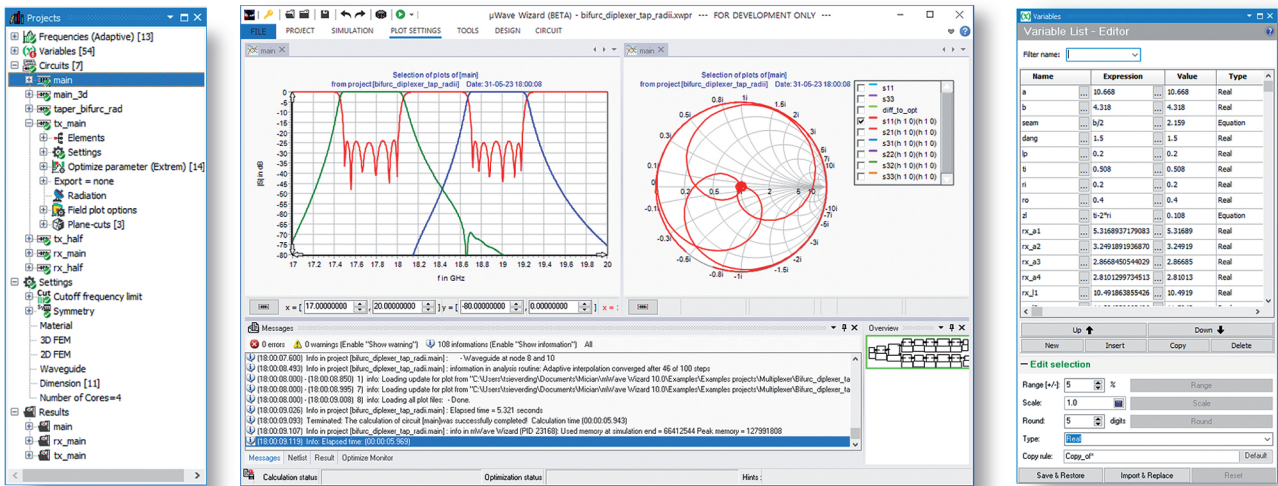
- Faster Project Loading: With Version 10.0, experience lightning-fast project loading times. No longer will you need to wait for all circuits to load when opening a project. Enjoy immediate access to your work, thanks to the optimized loading process. This time-saving improvement allows you to dive into your projects without delay.

- Enhanced Editors: We have paid attention to our customers' suggestions and introduced modifications to various editors. From the element editor and variable editor to the frequency editor and beyond, these revisions and generalizations result in a more user-friendly and efficient editing experience.

Simulation Core Enhancements:

Introducing the BOR (Body Of Revolution) FEM Solver: Our new parallel direct 2D FEM solver, featuring 1st and 2nd order base functions, empowers you to analyze radially symmetric structures significantly faster, using less computational resources and with improved accuracy compared to 3D FEM. Key features and capabilities of the BOR FEM solver include:
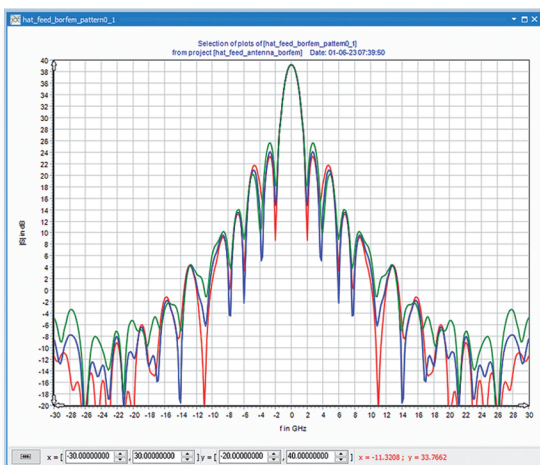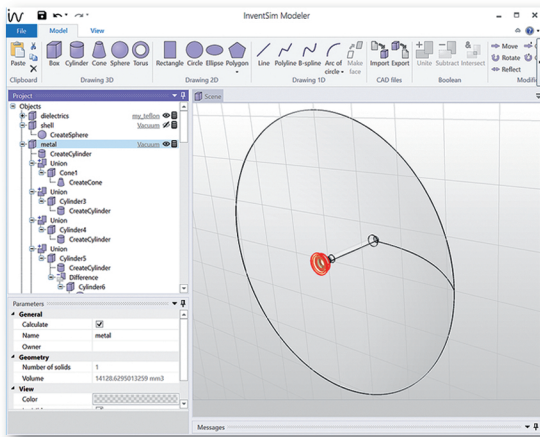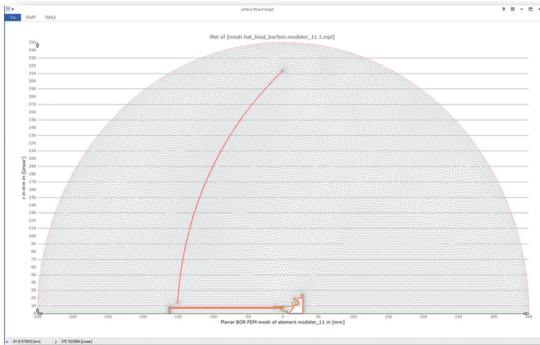
- Modeler element support through automatic cut of 3D structures, ensuring seamless integration with the modeling process.

- Fully automated 1st + 2nd order mesh generation for efficient simulation setup.

- Mesh truncation for radiating structures with spherical wave expansion (SWE) or absorbing boundary conditions (ABC) allowing accurate simulation of radiation patterns.

- Support for all angular orders (Fourier modes), enabling complete full-wave simulations.

- Multi-modal S-parameter interface for seamless integration with other elements.

- Eigenvalue solver for precise determination of resonant frequencies and Q-factors.

- Supports waveguide ports with inhomogeneous media, accounts for surface losses and dielectric volume losses.

- Field and radiation pattern calculation with visualization in the user interface and post-processing using the 3D viewer.

- Experience faster field calculation, S-matrix combination, and FEM matrix assembly, resulting in improved simulation performance and reduced computation time.

- The computation time for the reflector antenna shown here is about 130 sec/fp, using 498,000 unknowns. Back scattering is strictly taken into account.

Upgrade to µWave Wizard™ 2023 (v 10.0) and unlock the power of a more intuitive user interface, advanced simulation capabilities and accelerated design workflows. Experience the next level of microwave design excellence.