

SPECIFICATIONS

BG420706

“Please Quote this simulation package or its equivalent. The simulation package shall enable, in a single platform with user-friendly graphic user interface (GUI):

- modelling of parameterized structures and import/export of CAD models;
- material properties database for common materials and surfaces, including coatings;
- meshing of the model;
- computation of eigenmodes and eigenvalues for loss-free and lossy structures in a user-defined frequency range, tools to perform parameter sweeping, sensitivity analysis and optimization, automatic calculation of intrinsic quality factor and external quality factor at the structure ports, power losses in components, and Lorentz force detuning, with the capability to couple with mechanical and thermal solvers;
- computation of S-parameters in a broad frequency band in a single simulation run in time-domain and frequency-domain, port modes in the frequency domain and monitors for electric and magnetic fields, current and power loss densities.
- computation of wake fields excited by non-relativistic and ultra-relativistic beams and automatic calculation of wake impedances and wake potential, associated time-averaged power loss in model volumes and surfaces, and monitors for electric and magnetic fields, current and power loss densities, with capability to couple with thermal solver;
- particle tracking for particles emitted by a user-defined source surface or by secondary electron emission, with capability to monitor particle loss/creation evolution in time and to couple with thermal solver;
- processing of simulation results using user-defined expressions prior and after the simulation has been resolved;
- export simulation results as ASCII files;
- automation capability using VBA and MATLAB;
- compatible with simulation models, calculation expressions and automation routines already developed by the EIC project employees for CST over the last 10 years;
- technical support to assist with the preparation of simulation models and calculations.”