TaraNG: 3D Electromagnetic Simulation Platform for Next-Gen Research

TaraNG is indigenously developed 3D electromagnetic simulation software by NUMERGION, engineered for advanced microwave, antenna, and RF system design. Tailored specifically for researchers, academic institutions, and industrial R&Ds, TaraNG stands out from conventional commercial tools by offering a fully customizable simulation environment with deep solver-level access—a rare capability in the EM simulation landscape.

Built with versatility and innovation at its core, TaraNG supports both time-domain and frequency-domain solvers, enabling precise analysis of antennas, microwave components, EM compatibility, and scattering problems. It further includes specialized solvers like PEEC for circuit-EM co-simulation, SEEC for metamaterials, and Physical Optics & Ray Tracing methods for RCS and high-frequency applications. These methods have been rigorously validated against global benchmarks, ensuring exceptional accuracy, scalability, and computational efficiency.

TaraNG empowers users through its advanced scripting environment, allowing complete control over simulation workflows, solver parameters, and user-defined physics. Researchers can go beyond black-box usage, directly modifying the core solvers for experimental methods, material models, or novel physical effects. Plug-in support and compatibility with third-party CAD/mesh data ensure seamless integration into diverse workflows.

Its powerful visualization suite includes 3D field plots, far-field analysis, S-parameter extraction, and real-time animations—critical for interpreting and validating simulation results.

TaraNG is more than a tool—it's a national enabler. Trusted by leading Indian institutions, it is extensively used in faculty development programs, workshops, and student research activities. With a cost-effective licensing model designed for academia and government research, TaraNG is optimized for India’s research ecosystem.