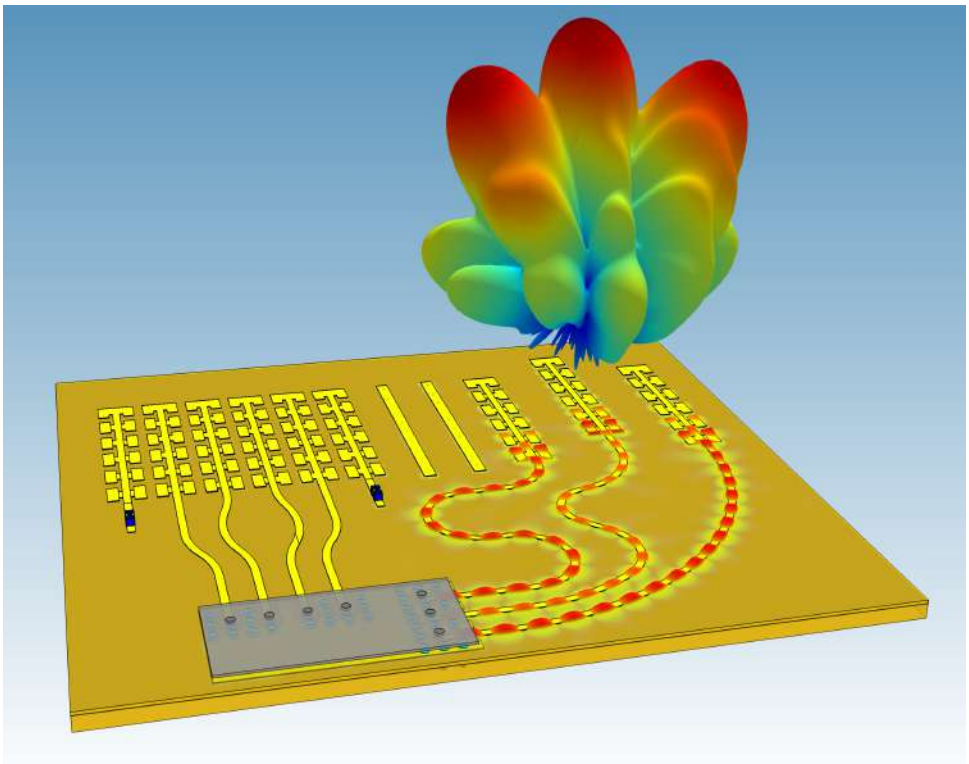
EMPIRE XPU 8.2
3D EM DESIGN SUITE

High performance 3D time domain EM modeling tool for Antennas, Microwave Circuits, EM Chip design and much more....

- **Extremely fast and highly memory efficient solver using IMST proprietary XPU Technology**
  - Full parallelisation on modern PCs (outperforms GPU supercomputers)
  - Just in time code generation
  - ~ 50% memory savings by intelligent coefficient compression
- **Interoperability with all common 3D CAD data, layout formats and vendor simulation projects**
- **Intuitive 3D Design mode with fully integrated multilayer designer**

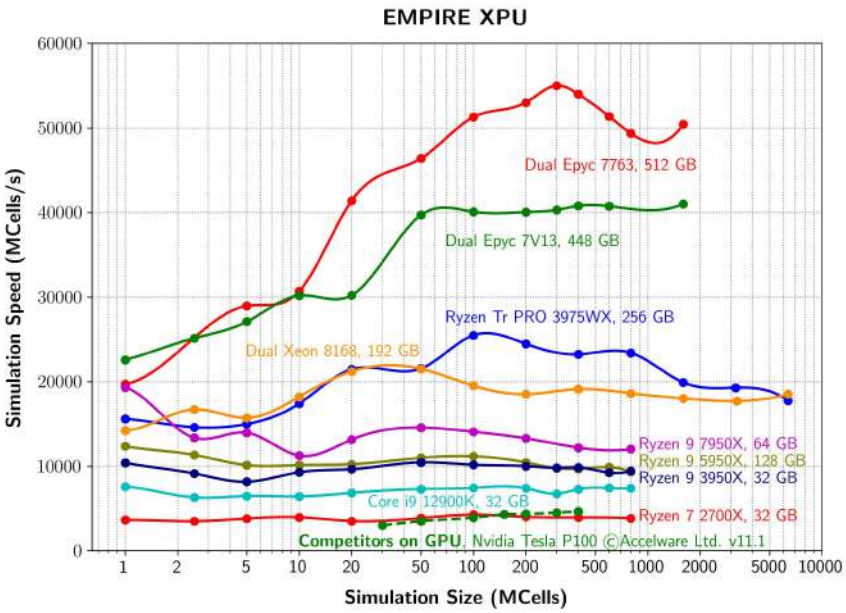


3D EMPIRE model of 77 GHz IMST radar frontend; easy & intuitive antenna feed line design untilizing new RF trace library element

NEW FEATURES INCLUDE:

- ✓ Conformal mapping and freeform-surface modeling tools
- ✓ RF trace library element for efficient and accuratce divider network and antenna feed design
- ✓ Metal sheet stack including new surface roughness model
- ✓ Time Domain Reflectometry analysis including Bessel filters for excitation and results
- ✓ Circuit Simulation based Nearfield to Farfield calculation

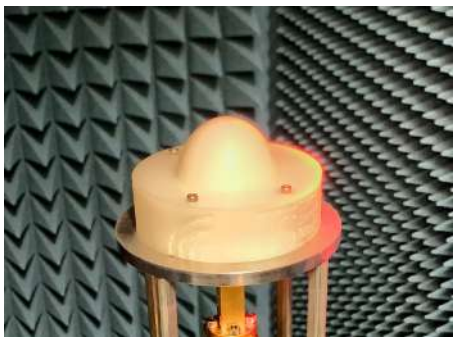
SIMULATION SPEED AND SIZE USING EMPIRE XPU VS. GPU BASED FDTD ON DUAL XEON PC WITH ONE NVIDIA TESLA K80 GPU CARD

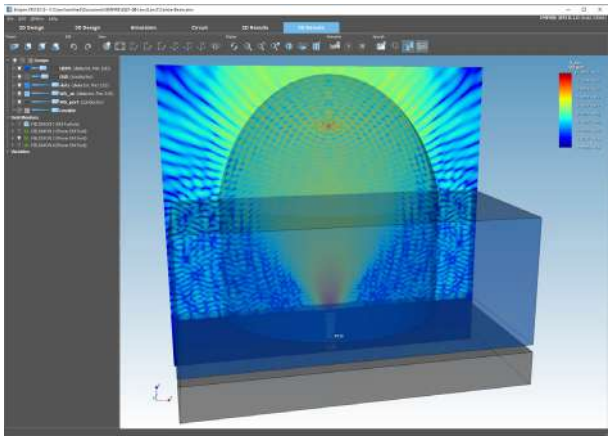


EMPIRE XPU TECHNOLOGY SURPASSES SIMULATION SPEED AND MAXIMUM MODEL SIZE OF GPU CARDS FOR FDTD SIMULATIONS

APPLICATION EXAMPLES:

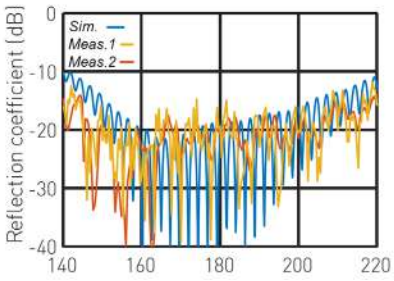
6G lens antenna

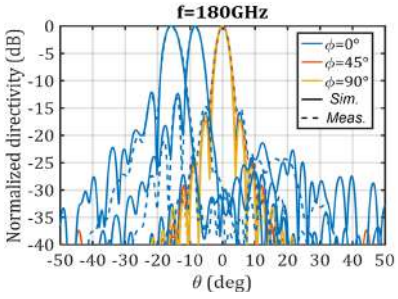




Electric field at 160 GHz

Frequency:
140 -220 GHz
Size:
520 Million cells
Memory usage:
15 GB
Simulation time: < 1h
Dual Xeon workstation





S-parameter
Antenna
Farfield pattern
simulation
vs.
measurement

Publications and measurements in collaboration with Rohde & Schwarz GmbH & Co. KG and TU Delft.

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