# Antenna Simulation
An Introduction to ANSYS HFSS

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Agenda

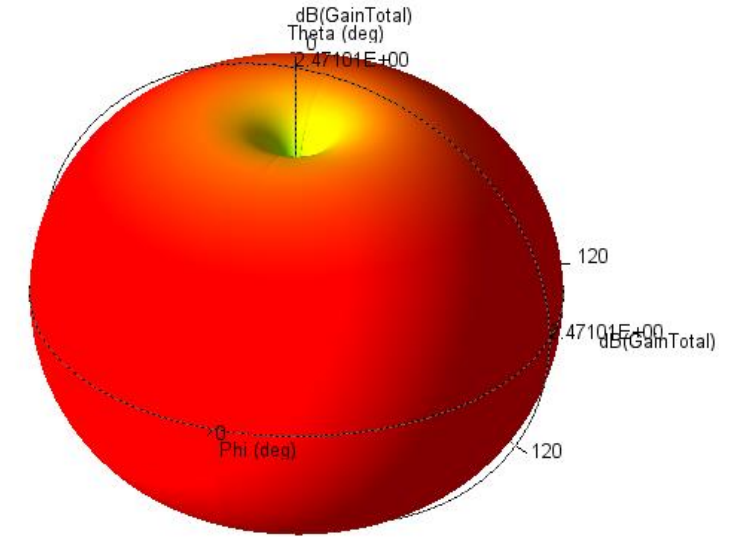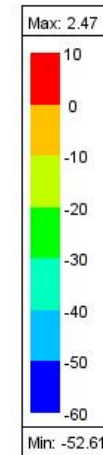- Launching ANSYS Electronics Desktop (AEDT)
- The AEDT UI
- Loading the Antenna Design Toolkit
- A First Antenna Solution:
    - ¼ Wave Di-pole
    - Some Post-Processing
- Adding a Body to the Solution Space
- A More Complicated Example
    - Bucket Loader
- How can you improve your HFSS skills?
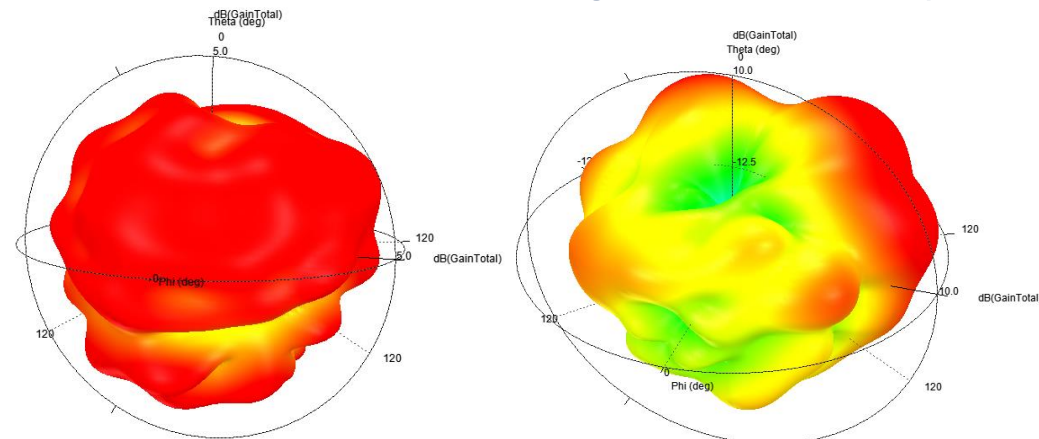- Discussion
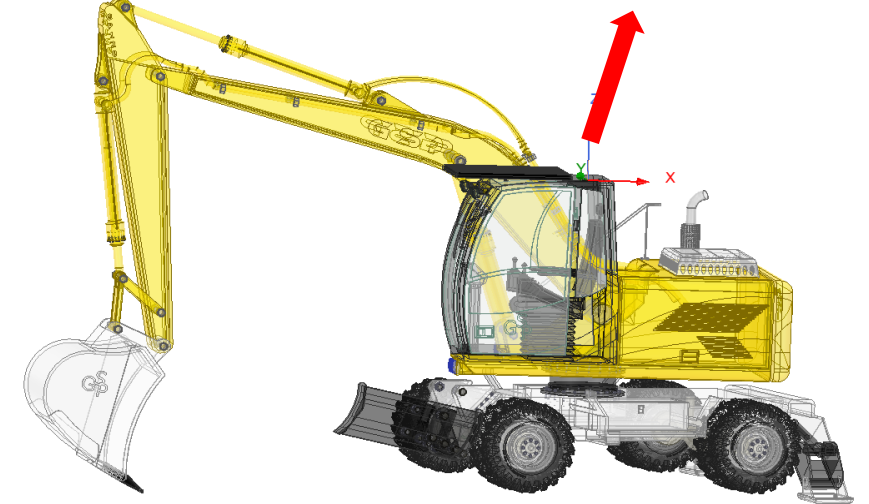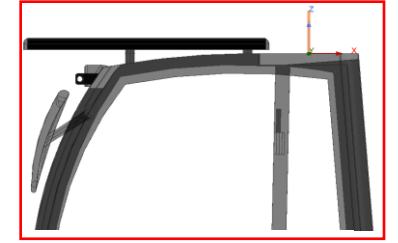
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# Let's Solve a Problem!

- Demo of AEDT HFSS
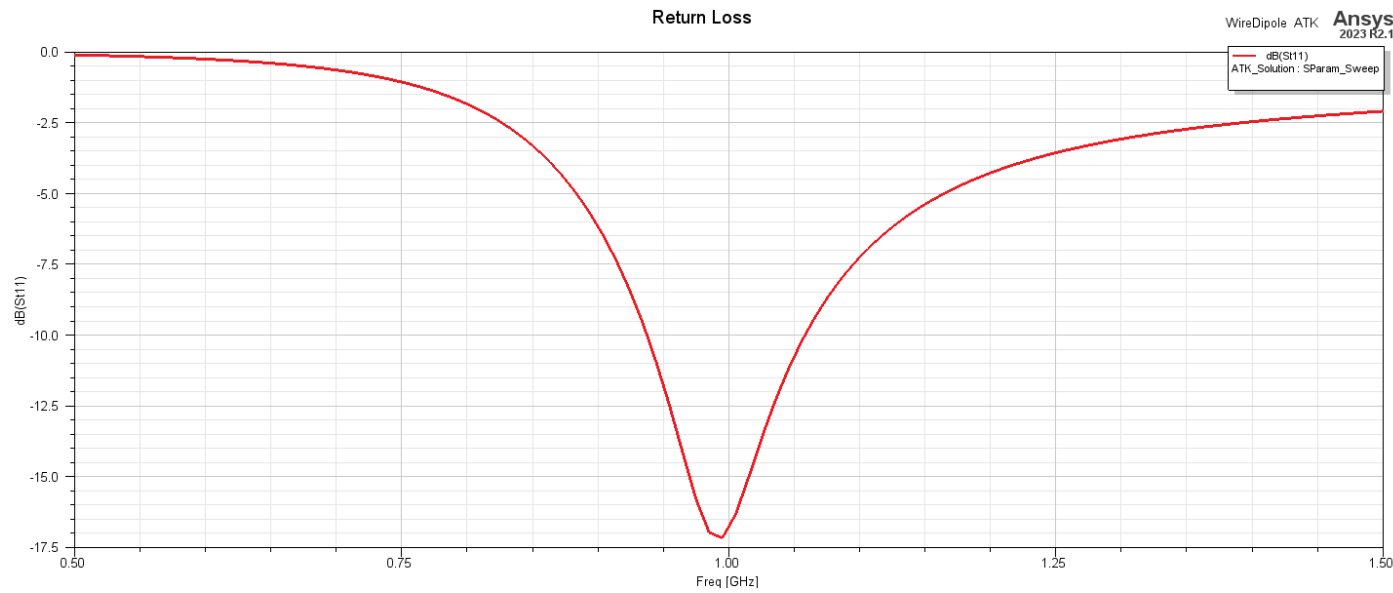
Antenna Placement, Real Platform

- Place 902 MHz Antenna onto the Bagger Excavator

- The CAD model impacts the Antenna's performance

  - 3D Far-Field Gain

  - Impedance

  - Return Loss

- Use a "Hybrid" solution approach to predict behavior in a larger solution space

  - Hybrid FEM/SBR+ solve

Matching Network Analysis

- Improve power transfer at the port

- Utilize Circuit in Electronics Desktop

  - "Smith Tool" Feature

    - Match to 50 ohms

    - Resonant at the desired frequency

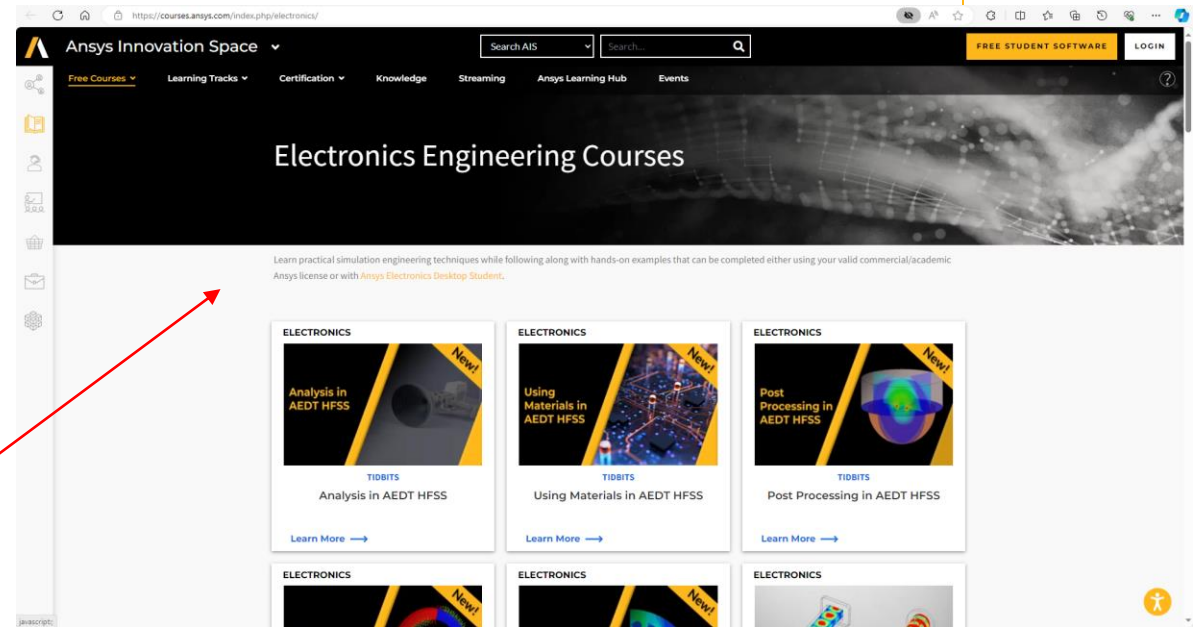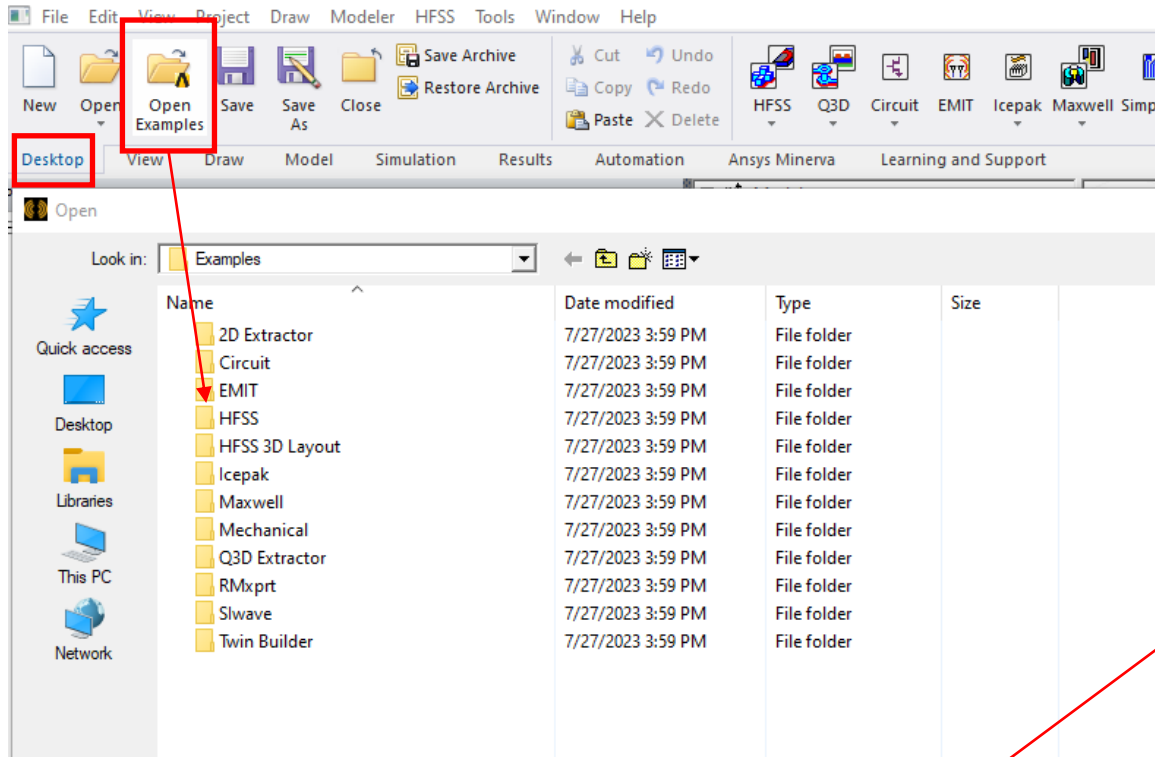- Incorporate Matching Network back into CAD

  Geometry
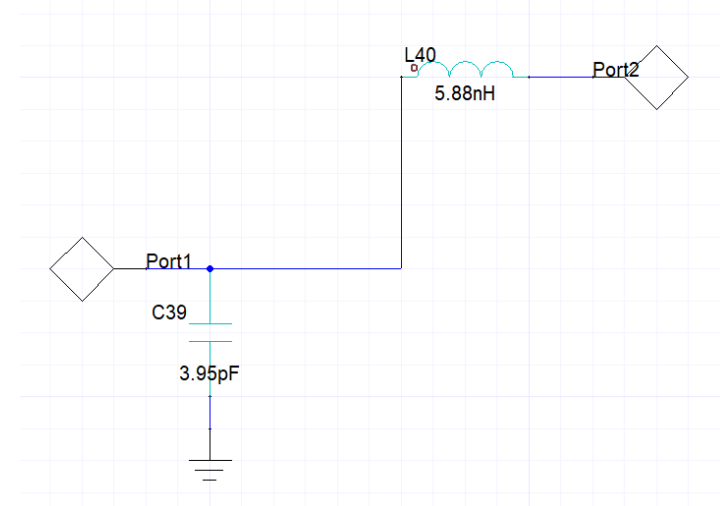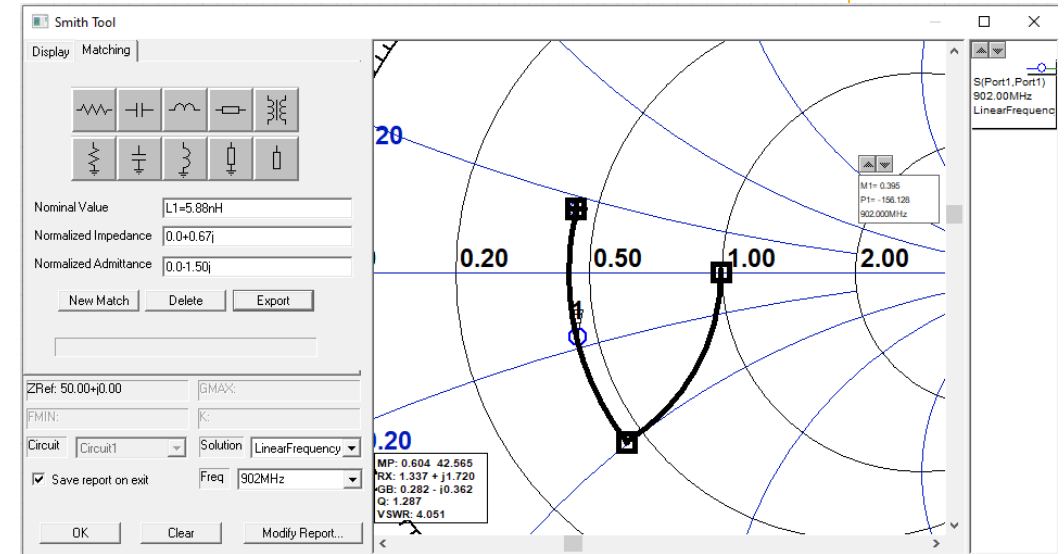
Improved Antenna Performance

- Antenna source was placed on CAD geometry to see the impact on the Antenna's performance

- Created a Matching Network to match the Antenna to 50ohms and improve its performance
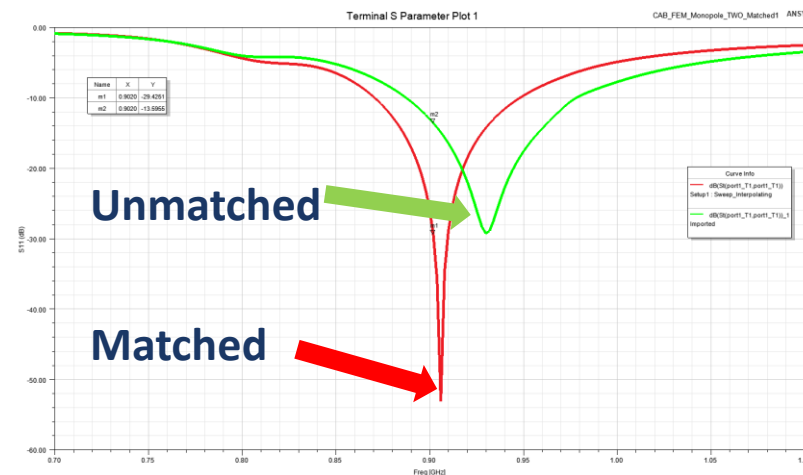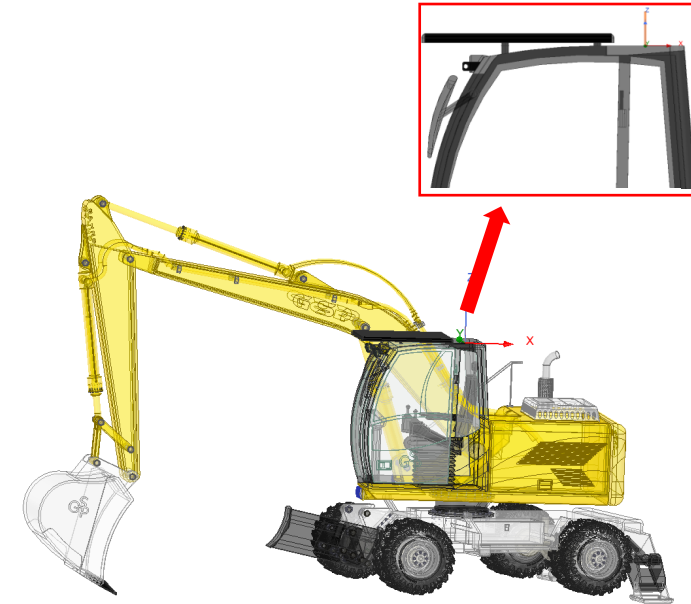
How can you improve your HFSS skills?

Discussion

- Questions?

- Comments?

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