Project A – UHF Dipole

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# EEL5462 Antenna Design and Analysis

Prof. Dr. Xun Gong - Section 0012

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A logo of a university

Description automatically generated

The drawing of the entire antenna structure with the air box shown. (50 pts)

A drawing of a structure

Description automatically generated

UHF Dipole Structure

Convergence Tab (10 pts)

A screenshot of a computer

Description automatically generated

Convergence Tab

A graph with a red line

Description automatically generated

Convergence Chart

S11 versus frequency (10 pts)

A graph of a function

Description automatically generated

S11 Plot (dB)

E Plane radiation pattern and H plane radiation pattern (10 pts)

A red circle with a point in the center

Description automatically generated

H Plane (Phi = 0 deg)

A graph of a circle

Description automatically generated with medium confidence

E Plane (Phi = 90 deg)

3-D radiation pattern (10 points)

A red oval with a green circle

Description automatically generated

3D Radiation pattern

Gain (5 pts) and efficiency (5 pts) from the simulations

Peak Realized Gain: 10log(6.4486) = 8.09 dB

Peak Gain: 10log(6.5591) = 8.17 dB

Total Efficiency: 98.28%

Radiation Efficiency (without Reflection Loss): 99.97%