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### THE RADIATION QUALITY FACTOR OF VERTICALLY POLARIZED SPHERICAL ANTENNAS ABOVE A CONDUCTING GROUND PLANE

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Document Type

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Degree Program

Electrical & Computer Engineering

Degree Type

Master of Science in Electrical and Computer Engineering (M.S.E.C.E.)

Year Degree Awarded

2012

Month Degree Awarded

September

Keywords

Antennas

Abstract

The radiation quality factor of small vertically polarized antennas above a ground plane is investigated. Although the quality factor of small antennas in free space has been investigated extensively in the past, the exact effect of a conducting ground plane on the antenna bandwidth is not clearly understood. In this thesis, quality factors of vertically polarized antennas above a ground plane are computed and compared with their free-space counterparts. The theoretical results on quality factors are validated with simulations of electrically small spherical helix antennas.

Advisor(s) or Committee Chair

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