

Simulation of coupling phenomena between a radiating antenna and a cable

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Abstract

During COST 286 action, a formulation of a problem concerning the coupling of GSM phones into a cabling system of busses and coaches has been done (details can be found on the COST 286 website <http://www.emc.york.ac.uk/cost286/>).

This paper deals with an aspect formulated for the first phase of Joint Technical Action, that is simulation of a wire above a ground plane in open area. The authors have used two numerical electromagnetic codes: CONCEPT II and NEC to model a voltage induced in a wire termination. The wire was modeled as laid over an infinite ground plane. As a source of the electromagnetic field, first a simple dipole antenna tuned to frequency 900 MHz was applied. Then we used a more sophisticated model of a double-band planar inverted F antenna. The results of different approaches have been compared and discussed.