Guidelines for Student Reports

Synthesis of a Wideband Planar Monopole Antenna for Mobile Wireless Applications (UWB-SPLINE.1.7-2.5.GHz)

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Abstract

In the framework of modern mobile communications, the recently developed high data-rate applications and services require the design of wideband and multiband antennas. Antenna modules for mobile terminals may be expected to operate over several frequency bands including:

1. DCS (1710-1880 MHz)
2. PCS (1850-1990 MHz)
3. UMTS (1920-2170 MHz)
4. ISM (2400-2485 MHZ)

Moreover, they must be small and compact because of the limited available volume of the terminal case.

The objective of the activity is the synthesis of a UWB planar monopole antenna suitable for mobile wireless applications. The design process is based on a spline representation of the antenna geometry and it is aimed at fulfilling the following requirements:

- good impendence match over the 1.7-2.5 GHz frequency range;
- small antenna dimensions (maximum size: 25x35 mm^2).

Reference Bibliography: Evolutionary Optimization [10]-[53]; Evolutionary Optimization and Ultrawideband Antennas [1]-[9].

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