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MOBILE PHONES ELECTROMAGNETIC FIELD RADIATION RESEARCH AND ANALYSIS OF ITS DISPERSION BY APPLYING MATLAB7 SOFTWARE

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Abstract

The propagation of electromagnetic radiation was investigated at different points, and the theory of covariance was applied to identify the main parameters by recording the max, mean and min values of density. The biggest electric field strength values are emitted by the second generation (2G) GSM mobile phones that operate in the frequency band of 900 MHz. The smaller electric field strength values are determined by the higher frequency (1800 MHz) used by mobile phones and smaller maximum power, the maximum of which reaches up to 1 W. Third generation (3G) UMTS smart phones that operate in the frequency band of 2100 MHz, emit smallest electric field strength values during the conversation. The values of digital arrays of measurement of the electromagnetic field energy flux density of interrelated covariance functions and digital arrays of individual covariance functions were identified. Data concerning interrelated covariances and auto-covariances of electromagnetic field energy flux density in a time scale are presented by means of the Matlab 7 software package.

Key words: covariance function, energy flux density of electromagnetic field, quantisation interval

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