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ELECTROMAGNETIC MAP IN THE 75 – 3000 MHZ BAND IN CERTAIN AREAS OF IASI CITY - PROTECTION STANDARDS

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Abstract

As a consequence of the increasing number and the transmitting power of radiofrequency (RF) and microwave sources, there is an increase of incident power density on human body. This paper presents the significant results of measurements concerning the power density of incident electromagnetic fields in the 75 – 3000 MHz band. Also an interpretation of experimental results and comparisons with recent protection standards are given.
Measurements are performed in the area of the "Alexandru I. Cuza" University including offices, laboratories, classrooms, and student dormitories; also, some buildings situated at different distances from the main building were subjected to measurements, such as: the Faculty of Orthodox Theology, the Akademos building, the Department of Interdisciplinary Research.
The experimental data are obtained by measurements on intensities of electric field E (V/m), magnetic field H (A/m) and power density S (W/m^2); the results are displayed as graphics of spectral curves (peaks), or numerically, where the values refer to individual frequency or on a narrow frequency band. After comparisons with recent protection standards, the most important conclusion is that, generally, in the area subjected to measurements the values of power density (integrated over a frequency band) do not surpass the safety values established in the recent protection standards for the general public; however there are two places, a plasma laboratory and an adjacent office where the power densities are higher than the safety limits.

Key words: incident power density, non-ionizing electromagnetic radiation, protection standards, specific absorption rate (SAR)

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