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## MEASUREMENTS ON ELECTROMAGNETIC SCATTERED FIELDS OF SOME RF AND MICROWAVE EQUIPMENTS

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### Abstract

In many laboratories, offices and home rooms exists devices and equipment working in the radio frequency (RF) and microwave (MW) bands. People working with these equipments may be exposed to electromagnetic fields of high density that can produce adverse effects on human health. It is suitable to perform measurements on the scattered fields, especially in the near-field regions (Fresnel' radiating and reactive regions), where the incident power density can reach dangerous levels for occupational personnel and for people living in the neighbourhood. The devices subjected to measurements are: a microwave oven, a microwave generator for supply a TEM (Transversal ElectroMagnetic) exposure cell; wireless communication devices, different mobile phones, a power microwave generator that produces cold plasma. In this paper besides a general introduction, many experimental results concerning the power density, electric and magnetic intensities of the scattered fields of the mentioned particular devices are reported; also, a comparison of these results with the most recent international protection standards is performed. The goal of the introduction is to define the radiation regions of different sources, thus permitting a better interpretation of the experimental data.

*Keywords:* electromagnetic fields, protection standards, radiation regions, scattered fields, specific absorption rate (SAR)

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