Abstracts

Power absorption and temperature elevations induced in the human head by dual-band phones

P. Bernardi, M. Cavagnaro, S. Pisa and E. Piuzzi. "Power absorption and temperature elevations induced in the human head by dual-band phones." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 151-154 vol.1.

A numerically efficient way to evaluate SAR deposition and temperature elevation inside the head of a user of a cellular phone equipped with a dual-band helical antenna is proposed. The results obtained for a given radiated power show that, although the maximum SAR value as averaged over 1 g in the brain is higher at 900 MHz than at 1800 MHz, the maximum temperature increase in the brain is higher at 1800 MHz. In fact, at 1800 MHz the thermal diffusion process moves heat from the external layers, where SAR values higher than those obtained at 900 MHz are present, toward the brain.

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