Abstracts

The dependence of electromagnetic energy absorption upon human-head modeling at 1800 MHz

K. Meier, V. Hombach, R. Kastle, Roger Yew-Siow Tay and N. Kuster. "The dependence of electromagnetic energy absorption upon human-head modeling at 1800 MHz." 1997 Transactions on Microwave Theory and Techniques 45.11 (Nov. 1997 [T-MTT]): 2058-2062.

The authors of a previously published paper on the dependence of electromagnetic (EM) energy absorption concluded that homogeneous modeling of the human head is suited for assessing the spatial-peak absorption for transmitters operating at 900 MHz or below. Additional studies became necessary for the frequency bands utilized by new mobile communications systems (i.e., 1.5 and 2.5 GHz) since some peripheral tissue layers have a thickness of the range of /spl lambda//4-/spl lambda//2. The results of the simulations combined with worst-case considerations confirmed the anticipated and more complex relationship between absorption and anatomical details at these higher frequencies. Nevertheless, a homogeneous representation of the head is suited for assessing the maximum specific absorption rate (SAR) in the head of the user of mobile telecommunication equipment (MTE) if the appropriate dielectric parameters are chosen.

❑ Return to main document.