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Osure RF Signs of the Times—Part Three

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This third entry on the FCC's ongoing review of RF exposure limits highlights the Notice of Inquiry that focuses on possible changes to the current RF exposure limits.

The NOI reiterates that the current exposure limits were adopted in 1996 and while expressing confidence in these limits, the NOI observes that intervening research studies, the ubiquity of device adoption, advances in technology, and developments in international standards support updating the record on RF exposure limits. Accordingly, the NOI seeks comment on whether the current exposure limits should be changed, and the costs and benefits of any suggested changes. The FCC explains its "intent is to adequately protect the public without imposing an undue burden on industry." It adds that its goal "is to open a science-based examination of the efficacy, currency, and adequacy of the Commission's exposure limits for RF electromagnetic fields."

The tenor of the NOI is that, while safety concerns regarding the exposure limits have not been scientifically substantiated, there is extensive research and standards bodies activity on many aspects related to RF exposure. These include partial-body and whole-body averaging of exposure; averaging area for power density; averaging time for limits; among others. The FCC must review a vast array of technical studies and information compiled since the adoption of the current limits as the agency consider whether and how to proceed. The views of other federal agencies with health and safety expertise will be particularly important to the FCC in this process.

Specific issues raised in the NOI may categorized as follows:

Exposure Limits. Issues of interest to the FCC include partial-body and whole-body averaging of exposure; averaging area and averaging time considerations; whether there should be peak pulsed field limits and/or limits on contact RF currents; whether the frequency range for FCC limits should be broadened from the current 100 kHz-100 GHz range; and conductive implanted objects.

Consumer Information. The FCC notes that it makes a variety of information on RF electromagnetic fields available to the public, but it seeks comment on whether it should make additional information available. If so, what form would be most useful to the public. It also asks whether it should require that more information be made available in equipment manuals, at point-of-sale, or on websites.

Exposure Reduction Policies. The FCC asks whether, in addition to its current "conservative, bright line limit[s]", it should consider a general technical approach to reduce exposure below its limits in

some situations, requesting comment on cost-benefit and other trade-offs of such an approach and that interested parties specify the specific circumstances, tangible benefits, and impact on the cost and performance of such an approach.

Evaluation. The FCC defines evaluation as “the determination of compliance with its exposure limits by measurement or computation.” The FCC requests comment on the pros and cons of measurement versus computation and variants thereof. In addition, the FCC requests comments on the effectiveness of its SAR and MPE limits in certain situations and whether any of the non-bindings matters in its Knowledge Database (KDB) should be made mandatory.

Portable RF Sources. The FCC notes that, although Supplement C of EOT Bulletin 65 recommends maintaining separation of about one inch during the testing of consumer portable body-worn devices, many radiating devices may be used without any separation from the human body (e.g., Bluetooth headsets). The FCC states that its calculations suggest that some devices may not be compliant with its exposure limits without the use of a spacer to maintain a separation distance when body-worn. It asks for comments on whether it should consider zero spacing or actual contact with the body when testing some devices.

As this summary discussion demonstrates, the NOI is extremely broad and is important to equipment manufacturers, spectrum licensees, and many classes of RF device users. It is possible that, after developing an up-to-date record on appropriate exposure levels, the FCC may decide that the current exposure limits remain valid. The FCC frequently states that the current values are cautious and in many cases, equipment operates below the permitted levels.

On the other hand, if the FCC concludes that changes in the exposure limits are necessary or appropriate, the FCC likely would issue a Notice of Proposed Rulemaking setting forth the basis for and the details of the changes it proposes.

We believe the FCC’s next action in this proceeding will be adoption of many of the changes it proposed in its FNPRM discussed in the second entry of this three-part series, including some form of the more detailed signage requirements. Those signage changes, if adopted as proposed, will impose tangible costs for many FCC licensees. These include a significant financial impact–the costs of determining where signage is required and obtaining and installing the new signage. There is also the potential for significant fines from the FCC if licensees do not fully comply with the updated FCC rules.

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