Dear Contributor,

Thank you for participating in the public consultation of the ICNIRP draft guidelines.

Please note that it is important that ICNIRP understands exactly the points that you are making. To facilitate our task and avoid misunderstandings, please:

* be concise
* be precise
* provide supporting evidence (reference to publication, etc.) if available and helpful.

**How to complete the comments table:**

Please use 1 row per comment. If required, please add extra rows to the table.

This response document asks you to provide your ‘comment’, your ‘proposed change’, and the ‘context’ to this comment and proposed change. What is meant by these is the following:

**Comment :** A brief statement describing the issue that you have identified (and that you would like ICNIRP to take into account in the final version of the guidelines).

**Proposed Change:** A brief statement describing how you would like the document changed to account for this issue.

**Context:** A brief statement identifying relevant documents in support of your comment and proposed change.

**Please, provide your details below as per the online form and the provision of the privacy policy**

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| --- | --- | --- |
| Last name, first name: Gajda, Gregory & Paradis, Jonathan & Lemay, Eric | Email address: Your email address. | Affiliation (if relevant): Health Canada, Consumer& Clinical Radiation Protection Bureau |
| If you are providing these comments officially **on behalf** of an organization/company, please name this here: Health Canada, Consumer& Clinical Radiation Protection Bureau, Ottawa, ON, Canada | | |
| X☐ I hereby agree that, for the purpose of transparency, **my identity (last and first names, affiliation and organization where relevant) will be displayed** on the ICNIRP website after the consultation phase along with my comments.  ☐ I want my comments to be displayed anonymously. | | |

|  | **Document**  **(Guidelines, App A,**  **App B)** | **Line Number**  **#** | **Type of comment (General/ Technical/ Editorial)** | **Comment. Proposed change. Context.** |
| --- | --- | --- | --- | --- |
| **1** | Appendix A | 326 | Technical | With reference to lines 326 and 327 of the ICNIRP RF Guidelines, Appendix A, the local SAR OAHET for exposure durations >6 minutes (or reaching steady-state in 30 minutes) is stated to be 20 W/kg (averaged over 10g). If put in terms of SA (averaged over 10g), this threshold can be expressed as *SA10g* = 20 *td*, where *td* is the exposure duration in seconds and 20 is the slope (in W/kg) of the curve of *SA10g* versus *td*.  With reference to the local SA OAHET for exposure durations < 6 minutes (line 450), it is given as the formula: *SA10g* =500+354\*( *td* -1)0.5 for 360s > *td* >1s. The slope of this *SA10g* function varies smoothly with *td*. At *td* =359 s, it is calculated to be 9.3 W/kg (the slope has the functional form: 177\*(*td* -1)-0.5). At  *td* =361 s and beyond, the slope is 20 W/kg.  At the transition exposure duration of *td* = 360s, there is an artificial discontinuity of the slope of the OAHET *SA10g* versus *td* curve. Numerical calculations of the heating factors of multi-layer, planar tissue models under far-field exposure conditions at 1 and 3 GHz suggests that this discontinuity should be less abrupt. The worst-case calculations suggest that the asymptotic slope of the OAHET *SA10g* curve for *td* >360s could be reduced to 12 W/kg or even lower. This would provide a smoother transition, in terms of slope, between the OAHET *SA10g* curves above and below the transition *td*. This adjustment of the *SA10g* slope for *td* >360s would consequently imply a revision of the OAHET *SAR10g* (below 6 GHz and *td* > 360s) downwards by the same amount.  Investigate possible revisions to OAHET local SAR10g using planar tissue models under far-field exposure.  Attachment showing details and results of numerical calculations is available upon request. |
| **2** | Guidelines | 596,605,709,727 | Technical | For local exposures above 6 GHz, consideration should be given to specifying circular areas as opposed to square ones for spatial averaging of incident power density. The reasons include:   1. In practice, power density exposure patterns are circular or elliptical when projected on the measurement plane. 2. A circular pattern usually has a bell-shaped intensity distribution that can be characterized by determining the distance between half-power points from a single scan. The intensity distribution in an elliptical pattern is also bell-shaped in each principal axis. Its shape can be characterized by measuring the distance between the two half-power points on each principal axis. 3. The intensity distribution can be modeled as Gaussian and with knowledge of the distance between half-power points along both principal axes, the spatially averaged intensity can be readily estimated. 4. The entire spatial averaging procedure would consist of two linear scans, one along each principle axis, followed by a calculation. It is assumed that the spatial resolution of the probe is greater than the averaging area. 5. Most portable, hand-held, isotropic power density probes have circular symmetry and, in some cases, have projected sensing areas close in size to the 4 cm2 or 1 cm2 recommended spatial averaging area. As a result, the probe inherently provides spatially averaged readings. A circular spatial averaging area would, therefore, be compatible with the use of these probes when calibrated appropriately. 6. A circular averaging area avoids the low power density values that would occur in the corners of a square and is therefore, a more conservative approach.   consider specifying circular spatial averaging areas as opposed to square  Attachment showing details is available upon request. |
| **3** | Document ? | Line number | Type of comment | Insert your comment.  Insert your proposed change.  Explain the context of your comment. |
| **4** | Document ? | Line number | Type of comment | Insert your comment.  Insert your proposed change.  Explain the context of your comment. |
| **5** | Document ? | Line number | Type of comment | Insert your comment.  Insert your proposed change.  Explain the context of your comment. |
| **6** | Document ? | Line number | Type of comment | Insert your comment.  Insert your proposed change.  Explain the context of your comment. |
| Continue numbering | Document ? | Line number | Type of comment | Insert your comment.  Insert your proposed change.  Explain the context of your comment. |

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