

Federal Communications Commission
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Draft Laboratory Division Publications Report

Title: SAR Listings on Equipment Authorization Grants

Short Title: SAR Listings

Reason: New Publication

Publication

Keyword/Subject: SAR listing on Grants

First Category: Radio Frequency Exposure- MPE;SAR

Second Category: General RF Safety Question

Third Category:

Question: What are the guidelines for listing SAR numbers on Equipment Authorization Grants?

Answer:

The following provides guidance for Telecommunication Certification Bodies (TCBs) for uniform listings of specific absorption rate (SAR) numbers on grants of equipment authorization. Please contact FCC Laboratory about guidance for any devices where listing variations might apply.

- 1) When multiple frequency bands and wireless modes are considered, the highest SAR for each of the evaluated exposure conditions (head, body-worn accessories, product specific, simultaneous transmission, extremity etc.) across the frequency bands and wireless modes must be identified and reported on the grant (per equipment class, e.g., PCE, DTS).
- 2) Numeric values used for SAR listings on grants should be rounded to two decimal places. Grant listings should use the less-than symbol for all values less than 0.10; i.e., SAR < 0.10 W/kg.
- 3) Class II permissive change filings should list the highest SAR across all filings under an FCC ID (per equipment class, e.g., PCE, DTS).

- 4) When simultaneous transmission applies, either by SAR exclusion or volume scan SAR measurement, simultaneous transmission SAR should also be listed on the grant.
 - a) When simultaneous transmission SAR test exclusion applies, the highest sum of 1-g SAR for the simultaneous transmitting antennas or the highest stand-alone SAR used in the SAR to peak location ratio calculations should be listed.
 - b) If both of the exclusion conditions are used, the highest based on both of these should be listed.
- 5) Handsets generally require head SAR evaluations. For most handsets with an audio headset output or Bluetooth transmitter, body-worn accessory SAR is required. In addition, many handsets have personal wireless router capability (hotspot mode) and other product specific functions that require additional SAR measurements. In general, there are four types of SAR numbers that will be listed on the grant of equipment certification of a handset. The SAR numbers should be listed as follows:
 - The highest reported SAR for head, body-worn accessory, product specific (wireless router), and simultaneous transmission use conditions are #.## W/kg, #.## W/kg, #.## W/kg, and #.## W/kg, respectively.
- 6) For other devices that do not operate next to the head or use body-worn accessories, head and body-worn accessory SAR does not apply. SAR for these other devices is typically measured using body liquid in setups intended to cover a combination of exposure and use conditions. The SAR for this category of devices should be listed as follows:
 - The highest reported SAR for the device is #.## W/kg.
- 7) When a single exposure condition (head, body, or product specific) applies for a device, the highest SAR number should be listed without the exposure condition. Also, there may be other devices, such as a Bluetooth headset or helmet-mounted device, where only head SAR is measured. The SAR number for these cases should be listed as follows:
 - The highest reported SAR is #.## W/kg.
- 8) In situations where extremity SAR is required, either with or without other SAR requirements (head, body-worn accessories, product specific or simultaneous transmission etc.), the extremity SAR must also be listed. Examples of how the SAR number for this type of device should be listed are as follows:
 - The highest reported SAR for head, body-worn accessory, product specific, simultaneous transmission, and extremity (hand) use conditions are #.## W/kg, #.## W/kg, #.## W/kg, #.## W/kg and #.## W/kg, respectively.
 - The highest reported SAR for the device and extremity (wrist) use conditions are #.## W/kg and #.## W/kg, respectively.
 - The highest reported extremity (ankle) SAR is #.## W/kg.
- 9) Push-to-talk transmitters typically require body-worn accessory SAR, and are also tested for held to face conditions using a flat phantom with head liquid; in this case, the highest SAR across the device frequency bands is listed on the grant as head (not face) and body-worn accessory, similarly as done for handsets.