



# **Guidelines for Grant SAR Listings and Other Grant Comments**

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# Overview

- KDB pub. no. 690783 provides guidance for TCBs for uniform listings of SAR numbers in the comments field of grants of certification.
- The KDB DRAFT pub. on Grant Comments is intended to provide guidance for TCBs for uniform use of notes, comments, and conditions on grants of certification.



# SAR Listings on Certification Grants



# SAR Listings – Intro

- KDB pub. no. 690783 provides guidance for TCBs for uniform listings of SAR numbers in the comments field of grants of certification.
- Uniform SAR listings give quick indications that filings have appropriate exposure conditions and simultaneous transmission evaluations.
- Please consult with FCC Laboratory **BEFORE** using other SAR listing variations for any devices (i.e., avoid terms such as near-body, limb, face).



# SAR Listings – General

- 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 listed within each equipment class (e.g., PCE, DTS).
- 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 W/kg.
    - For example, for any SAR of 0.09 W/kg or less after rounding, use “The highest reported SAR value is < 0.10 W/kg”.
- Class II permissive change filings should list the highest SAR values across all filings under an FCC ID, within each equipment class (e.g., PCE, DTS).



# SAR Listings – Simultaneity (1)

- In cases where simultaneous transmission conditions apply, SAR exclusions or volume scan SAR measurements are applied separately, per the following guidelines, for the various device exposure or use conditions and transmitting mode combinations.
  - For simultaneous transmitting antennas with exclusions based on the sum of 1-g SAR values, use the highest sum result.
  - For simultaneous transmitting antennas with exclusions based on SAR to peak location separation ratio calculations, use the highest stand-alone SAR from the calculations.
  - For simultaneous transmitting antennas with volume scan SAR measurement, use the highest measured result.
- The highest simultaneous transmission SAR reported for all combinations of simultaneous transmission across all exposure conditions, transmitting modes, and equipment classes should be listed on the grant.

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# SAR Listings – Simultaneity (2)

## ● EXAMPLE 1

- head: PCE 1 W/kg, DTS 0.58 W/kg;  
sum-SAR = 1.58 W/kg;
- body-worn accessory: PCE 1 W/kg, DTS 0.57 W/kg;  
sum-SAR = 1.57 W/kg;
- highest SAR across exposure conditions = 1.58 W/kg = grant listing.

## ● EXAMPLE 2

- head: PCE 1 W/kg, DTS 0.58 W/kg;  
sum-SAR = 1.58 W/kg;
- body-worn accessory: PCE 1 W/kg, DTS 0.61 W/kg;  
sum-SAR = 1.61 W/kg; SPLSR = 0.29;
- highest SAR across exposure conditions = 1.58 W/kg = grant listing.

## ● EXAMPLE 3

- head: PCE 1 W/kg, DTS 0.56 W/kg;  
sum-SAR = 1.56 W/kg;
- body-worn accessory: PCE 1 W/kg, DTS 0.61 W/kg;  
sum-SAR = 1.61 W/kg; SPLSR = 0.31; volume-scan SAR = 1.57 W/kg;
- highest SAR across exposure conditions = 1.57 W/kg = grant listing.



# SAR Listings - Handsets

- Handsets generally require SAR evaluations for head exposures.
- For most handsets with an audio headset output or Bluetooth transmitter, body-worn accessory SAR is required.
- In addition, many handsets have other product specific functions such as personal wireless router capability (hotspot mode) that require additional SAR measurements.
- In general, there are four types of SAR numbers that will be listed on the grant of certification of a handset within each equipment class, listed as follows:
  - The highest reported SAR values 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.



# SAR Listings – Push-to-talk

- Push-to-talk transmitters typically require body-worn accessory SAR, and are also tested for held to face conditions using a simplified setup of flat phantom with head tissue-equivalent liquid.
- For consistency with as done for handsets, the highest SAR values across the device frequency bands are listed on the grant as head (not face) and body-worn accessory.



# SAR Listings – Other Comments

- User manual statements and content remain as at the discretion of applicants.
  - Where SAR results or descriptions are included in user manuals, the information must be correct and consistent with the grant comments.
- For now, the stand-alone SAR values listed remain as independent for each equipment class under an FCC ID.
- For now, only a single SAR value is listed for all simultaneous transmission combinations under multiple equipment classes or multiple FCC IDs.



# Comments, Notes, and Conditions Listed on Certification Grants



# Grant Comments – Intro

- The KDB DRAFT pub. on Grant Comments is intended to provide guidance for TCBs for uniform use of notes, comments, and conditions on grants of certification.
- Terms and concepts – the term “grant comment” generally can refer to:
  - Grant comment (or grant remark) – generic term referring to the input field Item 14 on the electronic FCC-TCB Form No. 731;
  - Grant condition – usually means specific restrictions for device operation and/or marketing;
  - Grant note – strictly speaking, refers to standardized grant comments listed as alphanumeric codes in the e-filing system.



# Grant Comments – General

- In addition to some device descriptions and device technical parameters, each grant (FCC Form 731) may include grant remarks, grant conditions, and/or grant notes.
  - Some grant remarks are basically informative only (e.g., how a device was tested).
  - Some grant remarks are restrictive, placing bounds on operations within the scope of the application (i.e., grant conditions).
  - Some grant remarks indicate special conditions of operation.



# Grant Comments – Categories

- General and specific categories of items covered by grant comments include:
  - Output power: radiated or conducted, nominal or maximum rated
  - Antenna installation and operating requirements.
  - Device operating requirements.
  - Operating duty factor requirements.
  - Body-worn accessory SAR compliance requirements.
  - SAR results listings (see KDB pub. 690783).
  - Occupational / Controlled RF exposure compliance requirements.
  - Modular transmitter requirements (see KDB pub. 996369).
  - Multiple simultaneous transmitter operating configurations.
  - U-NII devices: DFS), indoor-only.
  - Non-U.S. bands and modes.
  - Extended frequencies: non-FCC U.S. frequencies.
  - Booster, repeater, amplifier devices (see KDB pub. 935210).



# Grant Comments – General

- Grant comments should not be used as a substitute for addressing compliance for intended and reasonably expected operating configurations for a device.
  - For example, for connected modules intended and expected to be used with antennas integrated into notebook computers:
    - Application filings should contain evaluations and supporting information for portable device operating conditions.
    - Certification grants are based on the representations and test data shown in an application, therefore no-collocation and mobile device grant restrictions are generally inappropriate for such devices.



# Grant Comments – Draft Pub.

- A working draft of a KDB pub. was circulated to TCBs in Sep. 2011.
- A KDB DRAFT pub. is being published at OET website in the week of Oct. 24, 2011, for a 30-day comment period.
- Inputs welcome please for any additional grant comments that should be included in the list.