



**TELECOMMUNICATIONS
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By Electronic Delivery

June 30, 2012

Attn: Dr. Rashmi Doshi
Chief, Laboratory Division
Office of Engineering and Technology
Federal Communications Commission
7435 Oakland Mills Rd.
Columbia, MD 21046

**Re: *Comments of the Telecommunications Industry Association on
Draft Knowledge Database Publication 865664***

Dear Dr. Doshi:

The Telecommunications Industry Association (“TIA”) hereby submits input to the Federal Communications Commission’s (“FCC”) Office of Engineering and Technology (“OET”) on draft Laboratory Division Knowledge Database (“KDB”) publication 865664 (Is there any additional guidance for Specific Absorption Rate [“SAR”] measurements that addresses devices operating in the 100 MHz to 6 GHz range?) (“KDB 865664”). Specifically, TIA submits the following input for OET’s consideration:

- Repeatability Issue:
 - TIA hereby expresses substantial concern about the operation and impact of this KDB. We recognize FCC’s interest in insuring quality testing by Labs but believe that concern about accurate quality will not be addressed by this KDB sufficiently enough to warrant the extreme lab disruption it will create. TRPC’s primary concerns are twofold: (1) the increased test time that will be created for many products, and (2) the new issues that will need to be addressed regarding the treatment of the repeated test values.
 - That test time will be substantially increased is evident from the requirement of repeatability. There are three tiers for testing for the

highest measured SAR value: tier one has no requirement to repeat; tier two requires two extra tests; tier three requires “at least” three extra tests. For tier two products, there is a reasonable likelihood that the testing could trigger a SAR value in the tier three range, thereby increasing that product’s testing from two tests to “at least” three more tests on the new highest value. The impact of the testing, then, will be to cause the SAR values to spiral higher within the uncertainty range and substantially increase testing.

- The above example demonstrates that new guidance will be needed for how to treat repeated tests. For example, all tests subsequent to the initial test could be treated only as verifiers to substantiate the SAR value, and, therefore, would not be a value used on the grant even if one or more were higher than the verified value – but within the uncertainty range. Another approach could be to do a simple of average the values, which could result in a value on the grant that does not tie to any measured value. The complexity of the issue will require significantly more direction than now is contained in the KDB.
- TRPC does not believe that the added complexity will render more reliable outcomes. To the extent that the FCC does not find a Lab’s data to be reliable, more unreliable data will not address the issue. Rather, additional indicia of reliability are required.
- Generally, new requirements for System Validation and resolution tolerance of post processing algorithms for scan resolution used in SAR measurements are included. Resolution tolerance may be requested to support marginal test results. More time is needed to understand what the FCC interprets as marginal or unacceptable resolutions and what this means.
- On page 4, the new information and formatting required for SAR Reports will require a major overhaul of test reports including the requirement to place SAR compliance results on a summary page at the front of report where space is limited. It is not clear why a new report format is needed or what the impact will actually be, but it will require costly changes in established report

software and seems likely to increase the amount of time it takes meet the additional reporting requirements.

- On page 10, the new proposed SAR measurements required for repeatability will significantly increase test times and change past practices regarding measurement uncertainty. It appears that repeatability is replacing the well-established approach based on measurement uncertainty information for certain SAR levels, and is thus inconsistent with the FCC guidance to use IEEE 1528-2003 standard.
- On page 10, bullet 3(c) SAR scan procedures are provided. TIA believes that a KDB inquiry should not be required when using the state of the art SAR methods described in these KDBs and automatically implemented in the the current state-of-the-art SAR measurement systems. Please consider removing this requirement.
- On page 11, there are new requirements for System Validation and Resolution Tolerance of post-processing algorithms for scan resolution used in SAR measurements. Resolution Tolerance may be requested to support marginal test results. We recommend that FCC delay implementing this KDB until the industry has more time to understand what the FCC interprets as marginal or unacceptable resolutions and what this means. We also recommend that FCC follows existing international standards. Any new requirements should be discussed in the standard committee to get acceptance of other international experts.
- On page 12, Three criteria are specified for the measurement of dipoles during system validations and verifications:
 - 1g SAR must be within 10% of SAR target
 - Extrapolated peak SAR at phantom surface must be within 15% of calibration value, - OR -
 - within 15% of value stated in IEEE Standard 1528-2003.

The need for verifying all three criteria for every dipole measurement seems excessive. Rather, checking that the 1g SAR value is within 10% of the

calibrated target (as per the system performance check specified in the IEEE Standard 1528-2003) should be sufficient to verify SAR measurement system continues to operate within expectations.

- On pages 12-14, where system validations and verifications are provided, the entire section is somewhat confusing, and it appears that it creates a significant additional burden on test labs (*e.g.* the extensive CW and modulated validation measurements), but seems completely beyond the requirements of IEEE Standards 1528-2003 and -2011. Further clarification of the rationale and intent would be useful.
- On page 14, we note that the requirement to perform system verification per each probe calibration point is not a requirement of IEEE Standards 1528-2003 or -2011. Rather, these standards allow system performance checks at a frequency that is within $\pm 10\%$ of the compliance test mid-band frequency.

As the purpose of system performance checks is to verify that the measurement system's characteristics have not changed in an unacceptable manner, it would seem that the IEEE methods adequately accomplish this end. We respectfully request that the FCC explain the need for this new procedure.

Given the potential impact of the proposed KDBs on test time, lab capacity, and even product design, we request that OET determine and announce a reasonable transition period for implementation of the KDBs once finalized. TIA members recommend that a transition period of at least ninety days in order to mitigate the impact that such extensive changes to testing protocols will have.

TIA has previously requested an extension of the due date for comments on draft KDBs as critical to industry's ability to provide thoughtful comments. In order to facilitate review of industry's concerns, TIA may submit comments to selected KDBs, subject to supplementation, after June 30, 2012.

We therefore respectfully submit this comment to draft KDB 865664, and urge the Commission to act consistent with the above.

Respectfully submitted,

TELECOMMUNICATIONS INDUSTRY ASSOCIATION

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