



TELECOMMUNICATIONS  
INDUSTRY ASSOCIATION

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**By Electronic Delivery via <https://apps.fcc.gov/oetcf/kdb/index.cfm>**

May 23, 2014

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 789033 (Guidelines for Compliance Testing of Unlicensed National information Infrastructure (U-NII) Devices PART 15, SUBPART E)***

Dear Dr. Doshi:

The Telecommunications Industry Association<sup>1</sup> (“TIA”) hereby submits input to the Federal Communications Commission’s (“FCC”) Office of Engineering and Technology on draft Laboratory Division (“OET Labs”) on its draft Knowledge Database (“KDB”) Publication 789033, titled *Guidelines for Compliance Testing of Unlicensed National information Infrastructure (U-NII) Devices PART 15, SUBPART E* (“Draft KDB 789033”).<sup>2</sup> TIA appreciates the efforts of the FCC Labs to provide key guidance on important topics under the FCC’s new rules in the 5 GHz band.

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<sup>1</sup> TIA is a trade association based in the Washington, DC area which represents the global information and communications technology (“ICT”) manufacturer, vendor, and supplier community through policy advocacy and standards development. TIA is also accredited by the American National Standards Institute (ANSI) as a standards developer for the telecommunications sector. From a policy perspective, TIA’s Technical Regulatory Policy Committee (“TRPC”) serves as a consensus manufacturer partner with the FCC, telecommunications certification bodies (“TCBs”) and other stakeholders towards streamlining and clarifying the mechanisms of equipment certification processes and procedures. See <https://www.tiaonline.org/policy>.

<sup>2</sup> See Office of Engineering and Tech., FCC, Draft Laboratory Division Publications Report, Electronic Labelling Guidance, Publication 789033 (May 9, 2014), available at <https://apps.fcc.gov/eas/comments/GetPublishedDocument.html?id=369&tn=716718>.

## **Transmitter Power Output Testing**

TIA urges the FCC Labs to simplify its guidance regarding transmitter power output testing by using related tests that are specified in ANSI C63.10(2013) or ANSI C63.10(2009).

TIA also recommends using conducted testing as opposed to radiated testing, unless the device's antenna is not removable.

## **Maximum Power Spectral Density (PSD)**

For PSD in the 5725-5850 MHz band, TIA urges the FCC Labs to endorse testing using 1 MHz bandwidth, or at least verify that the bandwidth setting chosen provides an accurate measurement. TIA makes this recommendation because typical spectrum analysis equipment uses a 1 MHz RBW/VBW setting, and a 510 KHz setting (not a 500 KHz setting), which may be troubling to bandwidth selection functions, resulting in the use of 510 KHz or a 1 MHz setting, preferred for wider band signal. TIA also notes that over the 1 MHz span, a more accurate maximum PSD can be determined due to measurement over the actual bandwidth of the emission. Use of a 1 MHz RBW/VBW setting would align the PSD test method with the rest of the UNII frequency spectrum 5150 – 5725 MHz.

## **Antenna Masks**

In Section H ("Measurement of emission at elevation angle higher than 30 degrees from horizon") where antenna masks are addressed, TIA makes the following recommendations:

- Because the current FCC requirements allow for the use of family-type antennas with similar characteristics of equal or lesser gain to be substituted for the original antenna approved with the device, new requirements for antenna patterns will be require (1) the verification of the antenna pattern, as well as (2) a review of the antenna mask and a determination of whether the antenna mount is similar to that which was approved with the original antenna, as the antenna mounting angle will also affect the antenna pattern. Equipment manuals typically include general antenna information, and not information on the mount. As a result, these new requirements would result in (1) manufacturers reviewing third party antennas for customers, or (2) manufacturers

providing specific guidance on antenna specifications to the installer. TIA therefore recommends that the KDB include guidance on what information should be provided to the professional installer.

- TIA supports the methodology provided in Section H's 1(a), which we believe provides the most accurate method to verify an antenna mask. Regardless of where antenna patterns are developed, antenna pattern information should be made available in the process of verifying an antenna's characteristics.
- TIA recommends that when Section H's method detailed in 1(b) be conducted consistent with ANSI C63.10(2013). Specifically Section 6.3 of this standard addresses radiated emission testing above 1 GHz and specifies that an antenna should be mounted (or device placed) on a table made of specified materials and with a height of 1.5 meters. Using the guidance in Section H's 1(b) in this way would provide a more realistic environment by simulating outdoor systems where antennas are mounted on towers and rooftops, and would also reduce false results from the ground plane of a testing facility. Alternatively, a full anechoic room could be used.
  - In addition, some requirements in 1(b) are not specific enough to ensure uniform results throughout the labs and manufacturing facilities that will use the process. TIA urges for the FCC Labs to consult with ANSI C63.10 to help better develop 1(b), and until then to allow for the radiated measurement guidance in ANSI C63.10(2013) to be used to help qualify antennas.

We respectfully request that OET Labs consider the above comments in its finalization of this KDB. Please contact us using the below information if we can be of more assistance.

Respectfully submitted,

**TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

By: /s/ Brian Scarpelli

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