

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Promoting Spectrum Access for Wireless Microphone Operations	)	GN Docket No. 14-166
	)	
Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions	)	GN Docket No. 12-268
	)	
Amendment of Part 15 of the Commission’s Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37, and	)	ET Docket No. 14-165
	)	
Amendment of Part 74 of the Commission’s Rules for Low Power Auxiliary Stations in the Repurposed 600 MHz Band and 600 MHz Duplex Gap	)	
	)	

**REPLY TO OPPOSITION TO PETITION FOR RECONSIDERATION  
OF AUDIO-TECHNICA U.S., INC.**

Pursuant to Section 1.429(g) of the Commission’s Rules,<sup>1</sup> Audio-Technica U.S., Inc. (“A-T”) hereby files this reply to the Opposition and Reply of CTIA.<sup>2</sup> A-T has participated extensively in the above-captioned proceedings, and has sought reconsideration of several actions related to spectrum access by wireless microphones. In particular, A-T has urged the Federal Communications Commission (“FCC” or “Commission”) to adopt the European Telecommunications Standards Institute (“ETSI”) EN 300-422-1 standard without modification.

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<sup>1</sup> 47 C.F.R. § 1.429(g).

<sup>2</sup> [Opposition and Reply of CTIA to Petitions for Reconsideration](#), ET Docket No. 14-165, GN Docket No. 14-166, GN Docket No. 12-268 (filed February 29, 2016) (“*CTIA Reply*”).

**I. WIRELESS MICROPHONE MANUFACTURERS AGREE THAT THE ETSI STANDARD SHOULD BE ADOPTED IN ITS ENTIRETY.**

Like other wireless microphone manufacturers, A-T supported adoption of the ETSI standard as proposed in both the *600 MHz* and *Wireless Mic NPRMs*.<sup>3</sup> As A-T noted in its Petition for Reconsideration,<sup>4</sup> adoption of the (unmodified) ETSI standard was appropriate because: (1) the wireless microphone community had already adopted use of the standard internationally; (2) the ETSI out of band emissions (“OOBE”) limits are significantly more stringent than previous FCC requirements and would protect adjacent services from interference.

Though the Commission adopted the ETSI mask, it also required an additional OOBE requirement that does not follow the applicable ETSI measurement method. The rule adopted by the Commission is actually more stringent than the ETSI standard because it specifies that all OOBE must meet the -90 dB level, something that the ETSI standard itself does not require. As noted by A-T and other wireless microphone manufacturers, this requirement is unnecessary to protect 600 MHz licensees, and will harm the wireless microphone industry.<sup>5</sup>

CTIA relies on its V-COMM test findings to contend that *even more stringent* OOBE limits for wireless microphones are necessary to protect 600 MHz licensees from harmful

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<sup>3</sup> *In the Matter of Amendment of Part 15 of the Commission’s Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37, and Amendment of Part 74 of the Commission’s Rules for Low Power Auxiliary Stations in the Repurposed 600 MHz Band and 600 MHz Duplex Gap*, ET Docket No. 14-165, GN Docket No. 12-268, [Notice of Proposed Rulemaking](#), FCC 14-144, ¶ 154 (rel. September 30, 2014) (“*600 MHz NPRM*”); *In the Matter of Promoting Spectrum Access for Wireless Microphone Operations*, ET Docket No. 14-166, GN Docket No. 12-268, [Notice of Proposed Rulemaking](#), FCC 14-145, ¶ 87-92 (rel. September 30, 2014) (“*Wireless Mic NPRM*”).

<sup>4</sup> [Petition for Reconsideration of Audio-Technica U.S., Inc.](#), ET Docket No. 14-165, GN Docket No. 14-166, GN Docket No. 12-268 (filed Dec. 17, 2015) (“*A-T Petition*”).

<sup>5</sup> [Opposition and Response of Sennheiser Electronic Corporation](#), ET Docket No. 14-165, GN Docket No. 14-166, GN Docket No. 12-268, at p. 3 (filed Jan. 27, 2016) (“*Sennheiser Opposition*”); [Comments & Response of Shure Incorporated](#), ET Docket No. 14-165, GN Docket No. 14-166, GN Docket No. 12-268, at pp. 5-6 (filed Feb 29, 2016) (“*Shure Response*”).

interference.<sup>6</sup> A-T disputes this contention, and notes that wireless microphone industry representatives and others have called both the V-COMM methodology and results into question in this proceeding.<sup>7</sup> Further, contrary to CTIA’s argument that adherence to the ETSI EN 300-422-1 OOB limits without modification would “cause harmful interference to primary licensed services,”<sup>8</sup> the ETSI standard and related OOB limits have already been used for years in Europe. It has been proven *in practice* that this level is sufficient to protect adjacent services.<sup>9</sup> Others in the wireless microphone industry agree that “no basis exists in the record to adopt a -90 dBc OOB limit for wireless microphones beyond plus or minus one megahertz removed from center frequency,” and that the rule as adopted is “unnecessary” and “goes far beyond...what is needed to protect authorized services.”<sup>10</sup>

In addition to being unnecessary to protect 600 MHz licensees, adoption of a more stringent OOB limit than prescribed in the ETSI standard will harm the wireless microphone industry. As noted by A-T in its Petition for Reconsideration, wireless microphones already designed to meet the ETSI standard and used in the global marketplace would not meet the new -90 dB requirement. The Commission’s decision to impose additional requirements will vitiate any advantages or efficiencies gained by producing wireless microphone products for use

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<sup>6</sup> CTIA Reply at p. 5.

<sup>7</sup> [Ex Parte Letter](#) from Catherine Wang and Timothy Bransford, Counsel for Shure Incorporated to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 14-165, GN Docket No. 14-166, and GN Docket No. 12-268 (Apr. 13, 2015) (noting that the CTIA analysis established a “false and overly sensitive baseline for wireless microphone OOB levels necessary to protect adjacent receivers.”) See also [Ex Parte Letter](#) from Aparna Sridhar, Counsel, Google, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 14-165 and GN Docket No. 12-268 (May 22, 2015)

<sup>8</sup> CTIA Reply at p. 2.

<sup>9</sup> A-T Petition at p. 5.

<sup>10</sup> Shure Response at p. 5 (citing Petition for Reconsideration of Lectrosonics, Inc., ET Docket No. 14-166 (filed Dec. 17, 2015); and Petition for Reconsideration of Shure Incorporated, ET Docket No. 14-165, pp. 3-7 (filed Dec. 23, 2015)).

worldwide, and the necessary re-engineering and testing processes will impair the wireless microphone industry (and its customers' businesses) for years to come – if, in fact, meeting the additional requirement over and above the ETSI standard is technically achievable.

Other wireless microphone manufacturers agree that the OOB limit will impede industry progress. Sennheiser stated that “[i]f this limit stands it will certainly delay the introduction of new transmitter models,” and [i]f this requirement is not amended to reflect the entire ETSI OOB limit as stated in the standard, it will not be feasible for industry to manufacture wireless microphones in the future.”<sup>11</sup> Shure, too, stated that manufacturers “cannot design and manufacture handheld and body-worn transmitters that satisfy such an extreme and sweeping limitation on spurious emissions.”<sup>12</sup>

## **II. CONCLUSION.**

For the foregoing reasons, it is respectfully submitted that the Commission should reconsider its decision to apply the -90 dB spurious emissions limit for all frequencies above and below the ETSI mask specifications. Such a limit is not necessary to prevent interference with 600 MHz licensees, and will cause harm to the wireless microphone industry.

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<sup>11</sup> *Sennheiser Opposition* at p. 4 (citing Petition for Reconsideration of Lectrosonics, Inc., ET Docket No. 14-166 (filed Dec. 17, 2015); and Petition for Reconsideration of Shure Incorporated, ET Docket No. 14-165, pp. 3-7 (filed Dec. 23, 2015)).

<sup>12</sup> *Shure Response* at p. 5.

Respectfully submitted,

**AUDIO-TECHNICA U.S., INC.**

By: */s/ Jacquelynn A. Green*

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March 10, 2016

**CERTIFICATE OF SERVICE**

I, Erin Fitzgerald, do hereby certify that on this 10<sup>th</sup> day of March, 2016, I caused a copy of the foregoing Reply to Opposition to Reconsideration of Audio-Technica U.S., Inc. to be served on the following, First-Class Mail, postage pre-paid:

Krista L. Witanowski, Assistant Vice President, Regulatory Affairs  
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