

June 27, 2016

Via Electronic Filing

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, D.C. 20554

**Re: GN Docket Nos. 12-268 and 14-166; ET Docket No. 14-165**  
**Ex Parte filing of Sennheiser Electronic Corporation**

Dear Ms. Dortch:

On June 23, 2016, Joe Ciaudelli, Director of Spectrum Affairs, Sennheiser Electronic Corporation, and Karl Winkler, Vice President for Sales, Lectrosonics, Inc., met with Paul Murray, Hugh Van Tuyl, Geraldine Matise, Rodney Small and, via phone, Ira Keltz.

The discussion concerned pending Petitions for Reconsideration and other outstanding matters related to the above-captioned proceedings. Sennheiser and Lectrosonics made the following points:

**Out-of-Band Emissions (OOBE) Requirement**

The wireless microphone requirement for out-of-band-emissions (OOBE) the Commission developed that, as written, extends throughout the radio spectrum (DC to daylight), is impractical and unnecessary to achieve the goal of protection for the incentive auction licensees. We highly recommend the Commission adopts the well-established European Telecommunications Standards Institute (ETSI) standards in their entirety.

ETSI applies two emissions measurement standards – a relative value (to the carrier) within the mask and an absolute value for outside of the mask (OOBE standard). The Commission adopted the first standard, but not the second. And in lieu of the second, the Commission adopted a requirement that spurious emissions are limited (to -90 dBc) beyond the mask, regardless of where the spurious emission lands within the spectrum, something that Sennheiser, Lectrosonics and other wireless microphone manufacturers show would be difficult or impossible to measure and meet.

Adopting the ETSI OOB standard, which uses an absolute rather than a relative value, actually affords more protection to adjacent services as well as provides practical manufacturing and compliance.

With the Commission's new requirement, the higher the output power of the device under test, the higher the allowed spurious emissions, and thus the higher probability of causing interference when defining the limits relative to carrier power. Meanwhile it would generally be more difficult for lower power transmitters to comply with the regulation, even though such transmitters would pose a significantly lower possibility of causing interference compared to standard or high power transmitters.

Adopting the ETSI OOB standard, based on an absolute value measurement, guarantees equally low interference probability for all microphone transmitters, regardless of power.

A large number of currently available wireless microphones already satisfy both ETSI emissions standards. Therefore, adopting the proven ETSI OOB standard would help ensure a smooth transition of microphones out of the channels that will be re-purposed by the incentive auction. Otherwise, years of research and development may be required, with little to no added benefit to any party.

### **941-944 MHz**

This range just became available to FCC Part 74 licensed microphone operators. However, the first license application for this range that was submitted has been declined, apparently due to concerns from NTIA.

From a functional standpoint, this block is vital because wireless microphone operators will be losing access to a large portion of UHF. Of any alternate range now available to microphones, 941-944 MHz has propagation characteristics that most closely mimic UHF, essential for hyper-critical professional applications.

Also, the Commission's recent Report and Orders have a significant number of changes that impact the production community, some with complex details. This has caused anxiety in the industry and at times misunderstanding of the Commission's intentions. Per the Commission's request of the microphone manufacturers, Sennheiser and Lectrosonics are committed to educating the public. Sennheiser and Lectrosonics explained the importance of providing timely and unambiguous information to the market regarding the new rules. Promptly resolving any details regarding use of this block will help achieve these goals.

**Sennheiser Electronic Corporation**

1 Enterprise Drive

Old Lyme, CT 06371

Phone: +1 (860) 434-9190

Fax: +1 (860) 434-1759

[www.sennheiserusa.com](http://www.sennheiserusa.com)

Please contact me with any questions.

Respectfully submitted,



Director, Spectrum Affairs  
SENNHEISER ELECTRONIC CORPORATION  
[Joe.Ciaudelli@Sennheiser.com](mailto:Joe.Ciaudelli@Sennheiser.com)  
212-688-6666

cc: Paul Murray  
Hugh Van Tuyl  
Geraldine Matisse  
Rodney Small  
Ira Keltz