

ROBERT J. BUTLER
HARRY F. COLE
ANNE GOODWIN CRUMP
DONALD J. EVANS
JUSTIN L. FAULB
PAUL J. FELDMAN
KEVIN M. GOLDBERG
DAVID M. JANET
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M. SCOTT JOHNSON
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MICHELLE A. McCLURE
MATTHEW H. McCORMICK
FRANCISCO R. MONTERO
RAYMOND J. QUIANZON
DAVINA SASHKIN
PETER TANNENWALD
JAMES U. TROUP
KATHLEEN VICTORY

1300 NORTH 17th STREET, 11th FLOOR
ARLINGTON, VIRGINIA 22209

OFFICE: (703) 812-0400
FAX: (703) 812-0486
www.fhhlaw.com
www.commlawblog.com

RETIRED MEMBERS
VINCENT J. CURTIS, JR.
RICHARD HILDRETH
HARRY C. MARTIN
GEORGE PETRUTSAS
JAMES P. RILEY

OF COUNSEL
THOMAS J. DOUGHERTY, JR.
ROBERT M. GURSS*
KATHRYN A. KLEIMAN
ROBERT J. SCHILL
LAURA A. STEFANI
ROBERT M. WINTERINGHAM

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LAURA STEFANI
(703) 812-0400
STEFANI@FHHLAW.COM

* NOT ADMITTED IN VIRGINIA

Via Electronic Filing

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

**Re: GN Docket Nos. 12-268 and 14-166; ET Docket No. 14-165; and
MB Docket No. 15-146
Ex Parte filing of Sennheiser Electronic Corporation**

Dear Ms. Dortch:

On April 13, 2016, the undersigned and Joe Ciaudelli, Director of Spectrum Affairs, Sennheiser Electronic Corporation, met with the following staff: Julius Knapp, Ira Keltz, Geri Matisse, Paul Murray, Rodney Small, Scot Stone, Chris Helzer, and Rodney Conway.

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

Part 15 Report and Order

- Sennheiser discussed possible scenarios for modifying existing equipment to ensure operations would meet the new rules, while reducing transition costs for wireless microphone owners.
- Sennheiser reiterated **the need to maintain the Section 15.201 waiver** for unlicensed wireless microphones.

- Sennheiser noted that wireless microphones operate at 250 mW adjacent to 700 MHz licensees and without guard band protection or a buffer zone. For this reason, the 20 mW power limit on wireless microphones operating in the duplex gap and the guard bands is unnecessary, and **the long-established industry standard of 50 mW is more appropriate.**
- The **database system needs to be fast and reliable**, regardless of whether it uses a “push” or “pull” approach.
- Professional productions require interference protection from white space devices. A **pathway for unlicensed microphone operators to register for protection** in the database system should exist for professional entities.

Expanding Wireless Microphone Opportunities Report and Order

- ETSI applies two emissions measurements – a relative value (to the carrier) within the mask and an absolute value outside of the mask. The Commission adopted the first measurement, 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, something that Sennheiser and other wireless microphone manufacturers show would be difficult or impossible to measure and meet under many situations. **Sennheiser asked that the Commission reconsider the application of the -90 dBc requirement outside the emission mask and instead adopt the ETSI out-of-band emission measurement standard in full.**
- With regard to 169-172 MHz, Sennheiser noted that when the Commission extended wideband frequencies to the narrowband wireless microphone frequencies that had never been coordinated, it created a situation where neither the wideband nor the narrowband wireless microphone channels now will be frequency coordinated. Lack of coordinated frequencies historically has limited use of the band by wireless microphones. To avoid intermodulation and otherwise make good use of these new wideband frequencies, as well as the previously existing narrowband frequencies, **Sennheiser requested that the Commission shift the frequencies to pairs that are coordinated.**¹
- With regard to the 1.4 GHz band, Sennheiser noted that the 30 MHz spectrum limit was unexpected and not needed. Use is limited to specific licensees and circumstances, and the frequency coordinator is well-situated to determine whether the number of channels requested by an LPAS licensee is necessary and appropriate. Absent a modification of the 30 MHz restriction, most qualified licensees will continue to require Special Temporary Authority, which would obviate the purpose of creating rules for wireless microphone operations in the band. **Sennheiser asked that the 30 MHz spectrum limit be eliminated.**

¹ See Consolidated Petition for Reconsideration of Sennheiser Electronic Corporation, at n.25, Docket Nos. 14-166, 14-164 and 12-268 (filed Dec. 17, 2015) (detailing specific suggestions).

Preserving White Spaces NPRM

- **With regard to the use of the preserved white spaces channel(s) being considered, the distance criteria should be 4 km from the boundary of a TV station's service contour, not 1.3 km suggested** in the NPRM. Any distance closer than 4 km will exclude lawful operation of unlicensed wireless microphones and therefore undermine the intent of preserving a channel for shared use of white space devices and microphones.

Please direct any questions to the undersigned.

Respectfully submitted,

/s/

Laura A. Stefani

Counsel for Sennheiser Electronic Corp.

cc: Julius Knapp
Ira Keltz
Geri Matisse
Paul Murray
Rodney Small
Chad Breckenridge
Scot Stone
Chris Helzer
Rodney Conway