

Before the  
**Federal Communications Commission**  
Washington DC 20554

In the Matter of	)	
	)	
Revisions to Rules Authorizing the Operation	)	WT Docket No. 08-166
of Low Power Auxiliary Stations in the 698-	)	
806 MHz Band	)	
	)	
Public Interest Spectrum Coalition, Petition	)	
for Rulemaking Regarding Low Power	)	WT Docket No. 08-167
Auxiliary Stations, Including Wireless	)	
Microphones, and the Digital Television	)	
Transition	)	

**REPLY COMMENTS OF  
SENNHEISER ELECTRONIC CORPORATION**

Sennheiser Electronic Corporation (“Sennheiser”) files these reply comments in response to the Notice of Proposed Rulemaking in the above-captioned proceeding.<sup>1</sup>

**A. NO ONE HAS EXPLAINED HOW WIRELESS MICROPHONES CAN VACATE  
THE 700 MHz BAND BY FEBRUARY 17, 2009.**

All parties that address the question agree that wireless microphones cannot remain in the 698-806 MHz band. The only dispute concerns the timing of their removal.

The Commission proposes to eliminate all wireless microphones from above 698 MHz by February 17, 2009.<sup>2</sup> That date is less than four months away, and will come only a few weeks after the earliest possible final order can take effect.

Several parties nonetheless support the Commission’s schedule. Those include 700 MHz licensees and their vendors and representatives,<sup>3</sup> the Society of Broadcast

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<sup>1</sup> *Revisions to Rules Authorizing the Operation of Low Power Auxiliary Stations in the 698-806 MHz Band*, WT Docket Nos. 08-166, 08-167, Notice of Proposed Rulemaking and Order, FCC 08-188 (released Aug. 21, 2008) (“Notice”).

<sup>2</sup> Notice at ¶¶ 14-16.

Engineers, Inc., and public safety interests.<sup>4</sup> But none of the licensees represents that it will go on the air nationwide as of February 17, so the reason for haste is unclear. And none of these parties offers any practical guidance on how a massive frequency change-over could be managed in the short time available.<sup>5</sup>

Two associations representing the broadcast industry, whose members rely on daily use of wireless microphones for quality production, urge a more gradual transition.<sup>6</sup> They point out that the six months' notice given by the Commission is inadequate,<sup>7</sup> and that such an abrupt transition would be disruptive to the industry and to users alike.<sup>8</sup> The short deadline is also unnecessary, these parties note, inasmuch as the new 700 MHz licensees will not deploy everywhere at once.<sup>9</sup> They propose tying the wireless microphone transition to the actual 700 MHz build-out.<sup>10</sup>

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<sup>3</sup> MetroPCS at 2-3; Motorola at 3; V-COMM L.L.C., *passim*; Verizon at 3-7; Wireless Communications Ass'n International at 5.

<sup>4</sup> Association of Public-Safety Communications Officials International, Inc.; National Public Safety Telecommunications Council at 4-6; State of California at 1; St. Clair County, Illinois Emergency Telephone System Board.

<sup>5</sup> The National Public Safety Telecommunications Council (at 4-5) mentions the need to protect approximately 45 narrowband 700 MHz public safety systems. Sennheiser understands that these operate in channels 63-64 and 68-69, and does not oppose a rapid transition out of those frequencies.

<sup>6</sup> Association for Maximum Service Television, Inc, and The National Association of Broadcasters ("AMST & NAB").

<sup>7</sup> AMST & NAB at 7-9.

<sup>8</sup> AMST & NAB at 3-5.

<sup>9</sup> AMST & NAB at 5.

<sup>10</sup> AMST & NAB at 6-7.

Other parties familiar with the wireless microphone industry agree that a sudden transition is neither feasible nor necessary.<sup>11</sup>

Congress set the DTV transition date back in February 2006.<sup>12</sup> The Commission could have launched a proceeding to relocate wireless microphones at any time during the past 2 ½ years. The need to adjust the rules is no surprise; the Commission acknowledged four years ago that wireless microphones would need attention in the transition.<sup>13</sup> The industry and its customers should not be subjected to violent dislocation now because the Commission chose to delay.

**B. THE COMMISSION HAS NO AUTHORITY TO BAN MANUFACTURE OF WIRELESS MICROPHONES FOR EXPORT**

The Commission proposes to “prohibit the manufacture, import, sale, offer for sale, or shipment of devices that operate as low power auxiliary stations [including wireless microphones] in the 700 MHz Band” effective February 17, 2009.<sup>14</sup> Shure requests that the Commission continue to permit manufacture of these devices in the United States for export abroad.<sup>15</sup>

The Commission is legally unable to adopt the ban that concerns Shure. Its authority to regulate the manufacture of radio-frequency devices comes from Section 302(a) of the

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<sup>11</sup> Audio-Technica U.S., Inc. at 7-10; Nady Systems, Inc. at 7-8; Shure Incorporated at 2-10 (suggests a 24 months transition); Thomas C. Smith.

<sup>12</sup> Deficit Reduction Act of 2005, Pub. L. 109-171, § 3002(b), 210 Stat. 4, 21 *reprinted at* 2006 U.S.C.A.A.N. 2nd. Sess., vol. 1.

<sup>13</sup> *Reallocation and Service Rules for the 698-746 MHz Spectrum Band*, 17 FCC Rcd 1022 at ¶ 33 (2002).

<sup>14</sup> Notice at ¶ 17.

<sup>15</sup> Shure at 14.

Communications Act.<sup>16</sup> The same section goes on to provide: “The provisions of this section shall not be applicable to . . . devices . . . manufactured solely for export . . . .”<sup>17</sup> The Commission not only lacks authority to prohibit manufacture for shipment overseas, but is specifically barred from doing so.

**C. THERE IS NO BASIS FOR REQUIRING WIRELESS MICROPHONE MANUFACTURERS TO FUND RELOCATION FROM 700 MHZ.**

The Public Interest Spectrum Coalition (PISC) proposed that wireless microphone manufacturers be required to replace “unauthorized equipment” with new products below 700 MHz.<sup>18</sup> The idea is predicated on PISC’s notion that the industry deliberately marketed hundreds of thousands of microphones to ineligible users.<sup>19</sup> The Commission requested comment.<sup>20</sup>

Sennheiser asserted in its first-round filing that its marketing had not violated any Commission rules.<sup>21</sup> Three other manufacturers have now come forward with similar statements.<sup>22</sup>

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<sup>16</sup> 47 U.S.C. § 302a(a) (“The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations (1) governing the interference potential of devices which in their operation are capable of emitting radio frequency energy . . . in sufficient degree to cause harmful interference to radio communications . . . .”)

<sup>17</sup> 47 U.S.C. § 302a(c).

<sup>18</sup> Informal Complaint and Petition of the Public Interest Spectrum Coalition at xiii, 29-30, 33-36 (filed July 16, 2008) (“PISC Petition”).

<sup>19</sup> PISC Petition at vi, 17.

<sup>20</sup> Notice at ¶¶ 21(3), 22.

<sup>21</sup> Sennheiser at 9-10.

<sup>22</sup> Audio-Technica at 15-20; Nady Systems, Inc. at 7; Shure at 15-23.

The one party that supports the PISC proposal does so based on the same allegation of illegal marketing.<sup>23</sup> Inasmuch as Sennheiser's marketing has not violated Commission rules, and its major competitors have attested likewise in signed statements, there is no basis on which to require these companies to fund replacement microphones.<sup>24</sup>

**D. KEY PARTIES SUPPORT EXPANDING ELIGIBILITY FOR WIRELESS MICROPHONES .**

The broadcast industry supports making theaters, live music producers, government bodies, and houses of worship eligible to use wireless microphones.<sup>25</sup> The suggestion itself is not remarkable, but the source is: a joint filing by The National Association of Broadcasters ("NAB") and the Association for Maximum Service Television ("AMST"). NAB represents the broadcast industry generally, while AMST's mission is to maintain quality of over-the-air television reception. Collectively, these entities wear very different hats in the proceeding. NAB's broadcast-station and network members are by far the biggest pool of eligible and properly licensed users of wireless microphones. MSTV's broadcast-station members are the most likely victims of interference from misuse of wireless microphones. Their joint support for expanding eligibility is the best possible evidence that wireless microphones are both in the public interest and not an interference threat to broadcast television.<sup>26</sup>

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<sup>23</sup> White Spaces Coalition at 4-5.

<sup>24</sup> Sennheiser also disputes that the Commission could require even a company shown to have marketed unlawfully to provide replacement microphones, as that is not among the sanctions available by law.

<sup>25</sup> AMST & NAB at 9-11.

<sup>26</sup> *See also* Motorola at 4 (wireless microphones not a significant source of interference to TV).

**E. THE COMMISSION SHOULD NOT LIMIT A PROVEN TECHNOLOGY TO ACCOMMODATE ONE HAVING HIGH RISKS AND SPECULATIVE BENEFITS.**

Those advocating authorization of “white space devices” – ubiquitous unlicensed consumer transmitters in television spectrum – seek to limit deployment of wireless microphones in channels 21-51.<sup>27</sup> Their reasoning is evident. An unlicensed device, such as a white space device, is prohibited from causing harmful interference to an authorized service.<sup>28</sup> Wireless microphones are authorized under Part 74 of the Commission's Rules.<sup>29</sup> Recent testing by the Commission shows that white space devices are unable to reliably detect the presence of wireless microphones,<sup>30</sup> and therefore unable to avoid interfering with them. Rather than work to improve their equipment, the proponents of white space devices seek to solve their interference problem by eliminating wireless microphones.

The White Spaces Coalition tries to rationalize its position with a claim that continued authorization of wireless microphones would “squander the white spaces” by blocking “affordable broadband access, wireless mesh networking, telemedicine applications, and

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<sup>27</sup> White Spaces Coalition at 2-4.

<sup>28</sup> 47 C.F.R. § 15.5(b).

<sup>29</sup> 47 C.F.R. §§ 74.801-882.

<sup>30</sup> *Evaluation of the Performance of Prototype TV- Band White Space Devices, Phase II*, OET Report, FCC/OET 08-TR-1005, Executive Summary at vi-vii (released Oct. 15, 2008) (“The Microsoft, Philips and I2R devices were tested for their ability to sense for the presence of wireless microphones (both FM/analog and digital) operating within UHF TV channels. . . . In the presence of DTV signals in adjacent channels, the detection threshold was degraded such that it affected *the ability of the devices to reliably detect the microphone signals*. . . . Wireless microphone sensing tests were performed using the I2R and Philips devices at two field locations. . . . At both sites and all the test locations, the Philips device reported all the channels on which the microphones were designated to transmit as occupied whether the microphone was transmitting or not. The I2R device *indicated several channels as available even when the microphones were on.*”) (emphasis added).

numerous innovations yet to come.”<sup>31</sup> The Coalition has this backwards. The benefits claimed for white space devices make good PowerPoint material, but have not been shown in practice. Even after several years of advocacy and repeated testing, their proponents still cannot get a clear okay from the Commission’s engineers on interference issues.<sup>32</sup> Wireless microphones, in contrast, do not interfere with other services. They are invaluable to the broadcasting of professional and college team sports, political conventions, widely-watched awards shows, special events, and news reporting, and equally so to professional motion picture production. They help producers to maintain the very high standards that the public has come to expect, and which help to make U.S. entertainment products a major global export.<sup>33</sup>

The Commission should not threaten the proven benefits of wireless microphones for the wholly speculative claims made for white space devices.

### **CONCLUSION**

The Commission should allow wireless microphone users adequate time to migrate from the 700 MHz band, and should expand eligibility for wireless microphones below 700 MHz. It has no authority to prohibit domestic manufacture for export, and no legal or other basis for requiring manufacturers to replace microphones above 700 MHz. And it should not threaten the

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<sup>31</sup> White Spaces Coalition at 8.

<sup>32</sup> See note 30, above.

<sup>33</sup> Moreover, any division of the spectrum between wireless microphones and white space devices should recognize that the broadcast of a major sporting event or awards show can require upwards of 100 microphone channels.

established success of wireless microphones to accommodate an unproven and, according to the Commission's own experts, potentially interfering technology.

Respectfully submitted,

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