

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
Washington D.C. 20554**

<b>In the Matter of</b>	)	
	)	
<b>Unlicensed Operation in the TV Broadcast Bands</b>	)	<b>ET Docket No. 04-186</b>
	)	
<b>Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band</b>	)	<b>ET Docket No. 02-380</b>
	)	
	)	

**COMMENTS OF  
THE MICROPHONE INTERESTS COALITION**

The Microphone Interests Coalition ("MIC"), by its undersigned counsel, hereby submits these Comments in response to the Commission's Further Notice of Proposed Rulemaking ("FNPRM") released October 18, 2006 in the above-captioned matter.<sup>1</sup> MIC represents a variety of wireless microphone interests,<sup>2</sup> including producers of major entertainment and sporting events, manufacturers, and many of the Nation's experts in audio production and engineering. MIC implores the Commission to honor its commitment to prevent harmful interference to wireless microphones or risk devastating and far-reaching consequences to a variety of events and productions integral to the American culture.<sup>3</sup>

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<sup>1</sup> *Unlicensed Operation in the TV Broadcast Bands*, First Report and Order and Further Notice of Proposed Rulemaking, ET Docket Nos. 04-186, 02-380, FCC 06-156 (released Oct. 18, 2006) ("FNPRM").

<sup>2</sup> "Wireless microphones" as used herein includes a variety of audio devices authorized under Part 74 of the Commission's Rules as secondary users of locally unoccupied television channels. In addition to wireless microphones, this equipment includes in-ear monitors, wireless intercoms, wireless assist video devices (WAVDs) and wireless cueing (IFB) systems.

<sup>3</sup> The Microphone Interests Coalition includes: The Grand Ole Opry; Sports Video Group; PRG Audio; Springboard Productions; Masque Sound; Sound Associates, Inc.; Ed Greene; and Ed Wiczorek.

## **I. STATEMENT OF INTEREST**

MIC is a coalition comprised of high profile wireless microphone interests representing the cornerstone of the entertainment and sports industries in the United States. Its members produce live music and entertainment events including a variety of theatrical productions, concert tours, corporate events and themed shows. Its members are also responsible for producing premier events such as the Grand Ole Opry, the Grammy Awards, the Academy Awards, American Idol, and the Super Bowl. MIC members have received numerous Emmy awards, a Tony award, a Grammy award recognizing their audio and production expertise. MIC's members offer unparalleled experience in the professional design, operation and use of wireless microphone systems and their role to bring into our living rooms the entertainment and sporting events that are central to American culture.

Wireless microphones are integral to these live productions. MIC fears that allowing new devices into the "white spaces" without sufficient testing would impair wireless microphone use and have the unintended consequence of disrupting all of the entertainment and sports productions that rely on them. MIC urges the Commission to take the time to ensure that wireless microphones will be fully protected before allowing any new devices into the "white spaces."

## **II. WIRELESS MICROPHONES ARE ESSENTIAL TO DELIVER ENTERTAINMENT AND SPORTS PRODUCTIONS TO MILLIONS OF AMERICANS**

The wireless microphone industry is vital to the distribution of arts, sports, news, religious, political, business, educational, and cultural information to the American public.<sup>4</sup> In these productions, wireless microphones are ubiquitous and the scope of their applications is

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<sup>4</sup> Wireless microphones are also used for other essential purposes such as law enforcement, public safety, and utility operations that are not discussed in these comments.

enormous. MIC represents the “front end” of the content chain. Wireless microphones must work perfectly or content will be damaged, destroyed, or, in the case of live events, potentially lost forever. Wireless microphones also give artists and performers freedom of movement, enabling innovative and even acrobatic productions such as Cirque du Soleil that could not possibly be put on with wired products.

In this proceeding, the Commission has heard from a variety of wireless microphone manufacturers about the potential harm new devices stand to cause. However, the Commission has not heard from the production and user community about the importance of wireless microphones and their vast cultural, social and economic reach. Wireless microphones are essential for numerous productions and events that define American culture. For example, MIC’s members include all of the major audio providers for all Broadway productions, which are all heavily dependent on wireless microphones. An estimated 12 million people attended Broadway shows in 2006, with gross tickets receipts of approximately \$906 million.<sup>5</sup> MIC members help produce American Idol, which logged approximately 30 million viewers a week and 37.3 million viewers for its 2007 season premiere.<sup>6</sup> The two most-watched telecasts of 2006 were the Super Bowl and Academy Awards, live events also extremely dependent on wireless microphones. Approximately 38.8 million people watched the Academy Awards in 2006,<sup>7</sup> and a staggering 90.7 million people watched Super Bowl XL. Wireless microphones make these

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<sup>5</sup> See [http://www.livebroadway.com/calendar-year\\_stats.html](http://www.livebroadway.com/calendar-year_stats.html) (visited January 29, 2007). In the Broadway theatre district, there are as many as 400 wireless microphone systems operating simultaneously as part of musicals, plays and other entertainment productions. These devices are all able to operate simultaneously because they have been meticulously coordinated.

<sup>6</sup> [http://news.usti.net/home/news/cn/?biz/2/wed/bn/Anielsens.R8vG\\_GyV.html](http://news.usti.net/home/news/cn/?biz/2/wed/bn/Anielsens.R8vG_GyV.html) (visited January 29, 2007).

<sup>7</sup> <http://www.variety.com/article/VR1117957556.html?categoryid=14&cs=1> (visited January 30, 2007).

events possible, delivering the content, the access, and the feeling of “being there” that audiences crave.

### **III. INTERFERENCE WOULD DEVASTATE THESE PRODUCTIONS AND HARM THE VIEWING PUBLIC**

These productions demand that wireless microphones operate perfectly. Every time an artist performs, he is staking his reputation on the equipment he uses. Further, more and more wireless systems are being used in productions, pushing the limited amount of available spectrum to the breaking point. There is no room for error. For example, for this year’s BCS Championship Game, just each team’s internal communications required 40 wireless microphone channels, wireless microphones for the game itself and for the halftime show required numerous additional channels. MIC members spend painstaking days coordinating frequencies in advance of landmark telecasts that use a multitude of wireless microphone systems. It is only through this substantial and coordinated effort that today’s wireless microphones function properly and seamlessly.

Injecting thousands of new devices into the “white spaces” risks crippling wireless microphone use. Interference would be devastating to the variety of important entertainment and sports productions that rely on wireless microphones. Many of these events are live, and some are so core to our culture that they are considered national events. When one light in a production goes out, no one notices. In stark contrast, when one wireless microphone goes out or experiences interference, every viewer of the telecast notices. This type of miscue can go so far as to supplant viewers’ memories of the entire performance. And when the telecast is the Super Bowl, the mistake is amplified 90.7 million times. The high-profile, real-time nature of these events means that interference simply cannot be tolerated.

#### **IV. WIRELESS MICROPHONES MUST BE FULLY PROTECTED**

Because of the severe consequences of interference to wireless microphones, the Commission must use extreme caution before allowing new devices into the “white spaces.” The Commission must fully protect wireless microphones in order to preserve their important uses. An important step is to make protected spectrum available for wireless microphone operations. Wireless microphones require a known, stable interference environment, which protected spectrum free from new devices would provide. In addition, before new devices are permitted, any theoretical solution such as smart technology must be fully tested in the laboratory and the field and proven to avoid interference to wireless microphones. Finally, it is premature to allow new personal/portable devices into the “white spaces” at this time because of the complex interference challenges they present. Only once fixed devices have been successfully introduced should the Commission proceed to the exponentially more difficult interference case of personal/portable devices.

#### **V. CONCLUSION**

Millions of Americans enjoy the high-quality entertainment and sports programming wireless microphones make possible. The risk of interference is great, and its effects far-reaching. Interference would harm not only artists and entertainers, but the viewing public as well. To avoid this unintended consequence, it is imperative that any new devices, both fixed and personal/portable, be thoroughly tested and proven to fully protect historically successful,

essential incumbent wireless microphone operations before such devices are allowed into the  
“white spaces.”

Respectfully submitted,

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