

October 23, 2008

**BY ELECTRONIC FILING**

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

**RE: Notice of Ex Parte Filing; ET Docket No. 04-186**

Dear Ms. Dortch:

The New America Foundation (NAF) submits this *ex parte* filing to respond to recent filings by Shure Incorporated proposing its “workable solution” to transition wireless microphones out of the 700 MHz band and protect wireless microphones operating in the television band from interference from white space devices.<sup>1</sup> However, this supposed workable solution is a highly inefficient use of prime television spectrum leading to the continued underutilization of spectrum that could be used to increase broadband access across America and launch a new era of innovation and wireless products for consumers.

Shure’s claims that spectrum sensing-based technology is incapable of resolving “complex interference problems in the ‘white spaces’” and the only “proposal that would protect wireless microphones is one that keeps adjacent TV channels clear of new unlicensed devices.” But, as provided in an *ex parte* filing from the White Spaces Coalition, the Philips Electronic test device in testing at FedEx Field in Landover, MD and at the Majestic Theater in New York, NY “never declared a channel available when it was being used by a wireless microphone.”<sup>2</sup> Although Shure offers the proposals below as a “workable solution,” they would award a glut of valuable television spectrum to Shure and other wireless microphone manufacturers who have consistently ignored FCC rules by illegally marketing and selling wireless microphones to unlicensed, and therefore ineligible, users. Rather Shure’s “workable solution” would continue to underutilize TV spectrum by walling off specific channels for wireless microphone services that only use the spectrum on a very intermittent basis, leaving valuable TV spectrum in areas across the country to continue to lay fallow.

Among the solutions Shure proposes:

**1) *Wireless microphone channels.*** Shure requests that for three years following an FCC white spaces order, 6 UHF and 2 VHF channels be allocated for wireless microphones. After three years, this would be reduced to 4 UHF and 2 VHF channels.

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<sup>1</sup> See Shure Incorporated, “White Spaces Solutions,” ET Docket No. 04-186, (October 2, 2008), available at [http://fjallfoss.fcc.gov/prod/ecfs/retrieve.cgi?native\\_or\\_pdf=pdf&id\\_document=6520173630](http://fjallfoss.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6520173630).

<sup>2</sup> Ex Parte, White Spaces Coalition, ET Docket No. 04-186 (August 19, 2008), available at [http://fjallfoss.fcc.gov/prod/ecfs/retrieve.cgi?native\\_or\\_pdf=pdf&id\\_document=6520038596](http://fjallfoss.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6520038596).

Such an excessive allocation of spectrum solely for wireless microphone use would severely cut the amount of available spectrum for white space devices in metro areas across the country and would move secondary users en masse (whether legal or illegal) to primary user status in these bands. In a highly crowded market such as New York, Shure's proposal would make no useful channels available for most white space devices or any other use. Shure's proposal reduces the number of available DTV channels in the New York metro area from 7 to 1. The lone available channel would be in the high VHF range of 2 – 6, which given the propagation characteristics of VHF is ill-suited for mobile white space devices. Additionally if you assume that the Commission is likely to exclude white space devices from those channels in order to protect cable set-top boxes from potential direct pickup interference, the number of available TV channels for white space devices drops to *zero*. Even in a less crowded market such as Dallas/Fort Worth metro area, Shure's channel set-aside would reduce the number of available DTV channels from 13 to 7, with 2 of the available channels in the 2 – 6 range. Thus, Shure's plan would eliminate nearly 2/3 of the available spectrum for white space devices in the Dallas/Fort Worth metro area.

To conserve spectrum, Shure suggests “center[ing] UHF protected channels around Channel 37 where available, VHF channels around channel 11.” However, this conservation plan is not even feasible in the New York metro area. Channels 35, 36, 38, and 39 will all be occupied by television stations after the digital transition and there is only one available channel in the “traveling” frequencies band of channels 7 – 13. Likewise in the Dallas/Fort Worth Metro area, where channels 35, 36, 38, and 39 will be occupied by the DTV stations, with only one available channel in 7 – 13 range. This is likely to be a similar story in cities across the country.

The most significant drawback of Shure's channel plan is that it is an extremely inefficient and wasteful use of valuable TV spectrum. As Chairman Michael Powell noted on the opening of the 04-186 proceeding, “Our overarching goal in this proceeding is to find the most efficient and comprehensive use of the spectrum resource while not interfering with existing services.”<sup>3</sup> Yet, Shure's channel set-aside plan would ensure that 48 MHz of valuable spectrum across the country would continue to be severely underutilized, leaving the spectrum to lay fallow for the vast majority of the time. Unlike broadcast television, which utilizes assigned spectrum continually in most local viewing areas, wireless microphones operate on a very intermittent basis and given their power levels, cover a very tiny geographic area. As a consequence, it is highly inefficient and wasteful to preclude usage of TV spectrum by white space devices in other residences or businesses outside the limited range of an operating wireless microphone, where there is zero chance of interference or when the wireless microphone system is not in operation. Thus, Shure's proposal runs contrary to the stated intent of the entire 04-186 proceeding.

These time and geographic inefficiencies are even more pronounced in rural areas where wireless microphones use is extremely limited and spread out. The vast majority of

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<sup>3</sup> See “Statement of Chairman Michael K. Powell,” ET Docket No. 04-186, available at [http://fjallfoss.fcc.gov/edocs\\_public/attachmatch/FCC-04-113A2.pdf](http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-04-113A2.pdf).

wireless microphone users in rural areas are churches and live concert venues, who utilize the spectrum only a small fraction of the time. Even if all the churches and live music venues in a local rural area were operating at the same time there would be miles and miles around those sites where the spectrum would remain unused. Instead those 48 MHz of prime spectrum in rural areas could support wireless Internet service providers and municipal/community wireless network providing desperately needed broadband access to underserved communities.

As important, Shure's plan is entirely reliant upon individual users manually tuning their wireless microphones to the set-aside channels in their local area. Given that these channels will vary from market to market, with current technology standards, wireless microphone manufacturers cannot produce wireless microphones only tunable to a fixed set of set-aside channels. This places the onus on users to tune wireless microphones to the set-aside frequencies and on the manufacturers to educate those users. However, as is easily verified, wireless microphone manufacturers, including Shure, have an abysmal record of educating wireless microphone users on the legal uses of their equipment. As recent FCC field testing demonstrated, even at professionally staged events such as a live broadcast of an NFL game and a professional Broadway production, wireless microphone systems were improperly operating on occupied television channels.<sup>4</sup> Although, wireless microphones are prohibited from co-channel operation on channel assigned for TV broadcasts<sup>5</sup>, in its publication, "Selection and Operation Wireless Microphone Systems," Shure offers the following in relation to wireless microphones operating on an occupied television channel:

The most effective solution for broadcast television interference is to avoid using frequencies of local active TV channels. Television transmitters may operate at power levels up to several thousand watts while wireless microphone systems typically have only 50 mw (fifty one-thousandths of one watt!) of output power. For this reason it is *unwise* (emphasis added) to choose wireless microphone system frequencies that fall in an active local TV channel block.<sup>6</sup>

Thus, Shure never explicitly tells users they are prohibited by statute from operating on occupied television channels, even offering that with analog broadcasts it is "sometimes possible to use frequencies just above or below the chroma carrier" of the TV signal.<sup>7</sup> As a consequence, it is unrealistic to expect operation of wireless microphones to only occur on these set-aside channels, meaning that operation will continue throughout the TV band.

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<sup>4</sup> Ex Parte, White Spaces Coalition.

<sup>5</sup> See 47 C.F.R. § 74.802(b).

<sup>6</sup> Shure Incorporated, "Selection and Operation Wireless Microphone Systems," at 29, available at [http://www.shure.com/stellent/groups/public/@gms\\_gmi\\_web\\_ug/documents/web\\_resource/us\\_pro\\_wirelessmicrophonesy\\_ea.pdf](http://www.shure.com/stellent/groups/public/@gms_gmi_web_ug/documents/web_resource/us_pro_wirelessmicrophonesy_ea.pdf).

<sup>7</sup> Id.

**2) Geolocation protection of large scale venues:** Shure asks the Commission to include protected TV channels in a geolocation online database per venue, “Channels in use by wireless microphones at large scale events, limited by the duration and location of event, and are licensed pursuant to updated Part 74 rules.”

Although this proposal is substantially more efficient than blocking off 48 MHz of spectrum exclusively for intermittent wireless microphone use, it is infeasible. Again, compliance for such a proposal is solely dependent upon the user, in this case the venue to register their event with a database and wireless microphone manufacturers to advise consumers of those requirements. As pointed to earlier, even at professional venues users were in violation of FCC rules. In addition, it requires white space devices to be in constant contact with the geolocation database, as events will be constantly added, changed or removed from the database. Unlike a more static DTV geolocation database where periodic updates would be sufficient, such a fluid database would require constant connectivity to the Internet, eliminating the potential for ad hoc wireless networks or white space devices providing non-Internet related wireless communications.

**3) Amend the FCC rules:** replacing current regulations with a “workable” licensing scheme that reflects today’s wireless microphone use:

- Update Part 74 licensing to reflect expanded eligibility to cover large scale uses that will be protected by geolocation and online database registration

- “Licensing by operation of rule” pursuant Section 307(e) of the Act eliminates cumbersome filing requirements for small scale wireless microphone operations in locally specified protected UHF and VHF channels (similar to medical devices)

NAF recognizes the critical need for the Commission to provide both amnesty and a way for unauthorized wireless microphone users deceived by deceptive marketing practices of wireless microphone manufacturers to migrate out of the recently auctioned 700 MHz band. To that end, NAF along with the Public Interest Spectrum Coalition (PISC) proposed the creation of a General Wireless Microphone Service (GWMS) pursuant to Section 307(e) of the Communications Act, allowing the “general public to operate wireless microphones on vacant UHF channels below Channel 52 while coexisting with other FCC authorized services.”<sup>8</sup> NAF’s proposal calls for GWMS users to remain secondary to broadcast services and licensed low-power auxiliary services (LPAS). However, Shure’s licensing scheme provides *all* wireless microphone users with primary status in locally specified protected UHF and VHF channels. Shure’s “licensing by operation of rule” and its reference of medical devices, implies that wireless microphones would have exclusive use of 6 television channels, similar to the Commission’s exclusive allocation of Channel 37 for the Wireless Medical Telemetry Service. Thus, new television stations would be prohibited from using those channels, as would any stations seeking new post-DTV channel allotments. In essence, Shure is asking the Commission

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<sup>8</sup> See “Informal Complaint and Petition of Public Interest Spectrum Coalition,” (July 16, 2008) at 31, available at [http://www.newamerica.net/files/Wireless\\_Mic\\_FINAL.pdf](http://www.newamerica.net/files/Wireless_Mic_FINAL.pdf).

to reward them with exclusive and lucrative spectrum rights in the TV band, despite illegally and deceptively marketing wireless microphone to unauthorized users, leading to an estimated 400,000-1,000,000 unauthorized wireless microphones currently operating throughout the TV band.<sup>9</sup>

Shure claims their approach provides “*very limited but minimally sufficient* interference-free spectrum for microphone use.” Clearly, reserving 6 channels or 48 MHz of prime TV spectrum in every single local viewing area in the country (even if they go unused) as well as additional protected channels for larger venues is not *minimally sufficient*. NAF supports sensible and “workable” solutions to allow white space devices and wireless microphones to co-exist in the TV band and recognizes the spectrum needs of wireless microphones.<sup>10</sup> However Shure’s proposal is an extremely inefficient and wasteful use of spectrum that could otherwise benefit hundreds of millions of Americans with more affordable broadband access and innovative new wireless technologies. Worse, it would reward an industry that appears to have deliberately ignored FCC rules and predicated their entire business on selling wireless microphones to unauthorized users. The Commission should not reward Shure and other wireless microphones manufacturers for their active support of widespread illegal behavior.

Respectfully Submitted,

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<sup>9</sup> See “Informal Complaint and Petition of Public Interest Spectrum Coalition” at vi.

<sup>10</sup> PISC recommended to the FCC an allocation of 5 MHz of spectrum for wireless microphones in the 2020 – 2025 MHz band. See “Informal Complaint and Petition of Public Interest Spectrum Coalition” at 33.