



1200 EIGHTEENTH STREET, NW
WASHINGTON, DC 20036

TEL 202.730.1300 FAX 202.730.1301
WWW.HARRISWILTSHIRE.COM

ATTORNEYS AT LAW

16 July 2007

Ex Parte

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

Re: TV White Spaces Proceeding, ET Docket Nos. 04-186, 02-380

Dear Ms. Dortch:

The White Space Coalition¹ hereby responds to the *ex parte* presentation submitted by Shure, Inc. (“Shure”) on 13 June 2007. The Coalition has every confidence that Commission testing will confirm that the operating parameters the Coalition has proposed are more than adequate to protect wireless microphones that operate in the TV bands. Nevertheless, the Coalition wants to underscore some fundamental characteristics of wireless microphone operation that have been conspicuously absent from the advocacy of those insisting on overprotective new rules for these devices. It does so because the Shure proposal would expand the existing protection for wireless microphones—most of which are used illegally—so as effectively to foreclose other uses of the white spaces. Shure proposes, in effect, dramatically to increase interference protection for illegal conduct to the great detriment of the general public. This is simply not acceptable.

ADOPTING THE SHURE PROPOSAL WOULD REWARD RAMPANT ILLEGAL CONDUCT

Time and again, parties in this proceeding have noted that most wireless microphones operating in the TV band do so without the required Commission authorization.² Indeed, even a draft document created by a task group of IEEE 802.22—whose proposals Shure has urged the Commission to adopt—concedes that “many wireless microphones manufactured to Part 74

¹ The White Space Coalition’s members include Dell, Inc., EarthLink, Inc., Google, Inc., Hewlett-Packard Co., Intel Corp., Microsoft Corp., and Philips Electronics North America Corp.

² See Reply Comments of Dell Inc., Google, Inc., the Hewlett-Packard Co., Intel Corp., Microsoft Corp., and Philips Electronics North America Corp., at 29-30 (Mar. 2, 2007) (“Coalition Reply Comments”); Economic/Legal Reply Comments of New America Foundation et al., at 5 (Mar. 2, 2007); Technical Reply Comments of New America Foundation et al., at 19-20 (Jan. 31, 2005); Reply Comments of Intel, Corp. at 25, n. 95 (Jan. 31, 2005) (“Intel Reply Comments”).

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requirements have been purchased by unlicensed consumers, companies, and organizations.”³ There can be no serious dispute that, as one respected acoustical consultant has explained, “the vast majority of wireless [microphone] systems are unlicensed and operate illegally.”⁴

Indeed, the Commission’s license database indicates that *there are fewer than one thousand active licenses* for low power broadcast auxiliary service under Part 74, which is the only service under which one can legally operate a wireless microphone in the TV bands.⁵ One can safely assume the wireless microphone manufacturers that have taken such a keen interest in this proceeding are not concerned with devices for just one thousand licensees.⁶ It surely appears these manufacturers are, at least, willing to turn a blind eye to the fact that they enable an overwhelmingly illegal market.⁷

Shure, for its part, has acknowledged only that some wireless microphone operators “have not fully documented their license,” and suggests that this phenomenon is characteristic of “every wireless service licensed by the Commission.”⁸ The implication that every wireless service is surrounded by rampant illegality is both offensive and without basis. If there is another wireless service or market so infected with illegal activity, it would surely come as a surprise to the Commission.⁹

A candid and detailed discussion in this proceeding of the full extent of illegal wireless microphone use (and likelihood of continued illegal use at the end of the DTV transition) is essential. This is because Shure’s proposal, which is substantially premised on illegal use, would unfairly deprive the public of the many broadband benefits of the white spaces, and certainly create perverse public policy incentives.

³ See 802.22.1 Comments on document 18-06-0073-00-0000_FCC_Cmt_TV_band_RO_d0 (“IEEE 802.22 Draft Comments”), at 2, *available at* http://www.ieee802.org/22/Meeting_documents/2007_Jan/22-06-0270-02-0001_TG1%20Cmts_on_18-06-0073.doc (last visited June 26, 2007).

⁴ See Jim Brown, *Wireless Microphones and the Audio Professional*, at 2, *available at* <http://www.audiosystemsgroup.com/wireless.pdf>.

⁵ See 47 CFR § 74.832 (limiting licenses for low power auxiliary stations to broadcasters and media producers).

⁶ Indeed, Shure’s entire product line of wireless mics appears to operate in the TV bands. See http://www.shure.com/ProAudio/Products/us_pro_ea_wireless_freq_help.

⁷ The Coalition notes that wireless microphone manufacturers could easily stop facilitating illegal device usage by selling their products only to licensed users.

⁸ Reply Comments of Shure Inc., at 12 (Mar. 2, 2007).

⁹ Shure and others have, in response to the white space initiative, aggressively sought legislation that would retroactively legitimize illegal use of TV band wireless mics, including uses for “personal consumer purposes.” See Interference Protection for Existing Television Band Devices Act of 2007, H.R. 1320, 110th Congress § 3(d)(3) (2007).

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First, it is simply inequitable to completely foreclose the use of any white space spectrum to accommodate existing uses that are predominately illegal.¹⁰ For example, under Shure's proposal, personal/portable unlicensed white space devices would be completely banned from adjacent channels, but illegal wireless microphone operations would be given unfettered access to this same spectrum. Similarly, notwithstanding the very few times and very few places where the legal Part 74 uses cited by Shure occur, Shure has asked for white space devices to be excluded at all times from 36 MHz of spectrum throughout large portions of the country. Adopting Shure's proposals would be better than an amnesty; it would be a gold-plated reward for illegal conduct, and only serve to encourage more of the same.¹¹

Second, there is every reason to believe that the "beacons" proposed by Shure, which would have the effect of terminating white space operations over many kilometers, would significantly and illegally impede the use of the white spaces. Just as sales of wireless microphones have been made predominantly to unauthorized users, sales of beacons would surely spread to these same law breakers, who would then create "bubbles" of protection around their illegal wireless microphone transmissions. There is also a very real concern that such beacons could fall into the hands of those who could seek to wreak havoc on wireless networks. Indeed, the 802.22 draft document referenced above cautions that the beacons Shure advocates "could easily be used to create a denial of service attack on [wireless networks] by anyone who purchased one."¹²

Simply put, innovative white space uses—including affordable broadband deployment in rural areas—should not be sacrificed to perpetuate a predominantly illegal market, particularly since the operating parameters proposed by the Coalition are more than adequate to protect wireless microphones.

EXISTING WIRELESS MICROPHONE OPERATIONS CONFIRM THE USE OF SPECTRUM SENSING

It is curious that Shure finds fault with spectrum sensing given that *every Shure wireless microphone currently sold uses spectrum sensing to help avoid harmful interference to incumbent operations*, just as white space devices will.¹³ Although others have called this fact to

¹⁰ See Ex parte letter from Catherine Wang and Timothy L. Bransford, Counsel for Shure, Inc., to Marlene H. Dortch, at 25 (filed Jun. 13, 2007) ("Shure ex parte").

¹¹ At minimum, the Commission should permit personal/portable device to operate in adjacent channels, and not reserve any channels in the 21-51 range exclusively for wireless microphone use, which would restrict a number of innovative broadband services. See Coalition Reply Comments at 28-30.

¹² IEEE 802.22 Draft Comments at 2. While the 802.22 draft goes on to recommend that sales of such beacons be controlled, the Coalition is unaware of any manufacturers that have endorsed such restrictions.

¹³ See http://www.shure.com/ProAudio/Products/us_pro_ea_wireless_freq_help ("All of Shure's current wireless systems are frequency-agile.") (last visited June 29, 2007); Shure's Audio Systems Guide for Theater Performances, at 23, available at http://www.shure.com/stellent/groups/public/@gms_gmi_web_ug/documents/web_resource/us_pro_al1532_theater_guide_ea.pdf (describing automatic frequency selection for wireless microphones); ULX Professional Wireless System Features, available at

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the Commission's attention,¹⁴ Shure has chosen to remain silent in this proceeding about this core feature of its wireless microphone systems.

The spectrum sensing technologies employed by wireless microphones are, if anything, further evidence of the viability of spectrum sensing for white space devices. Indeed, Shure has even urged the Commission to reserve adjacent broadcast channels for existing wireless microphone systems notwithstanding that some of these systems operate at a power level equivalent or greater than the maximum power of personal/portable device operations in non-adjacent channels.¹⁵ The fact that Shure's wireless microphone products are able to avoid causing harm to incumbent operations augurs well for the sensing technologies white space devices will use.

THE COMMISSION'S INDEPENDENT TESTING SHOULD REMAIN INDEPENDENT

Finally, the Commission should decline Shure's offer to participate in the Commission's independent testing.¹⁶ The FCC Laboratory already intends to examine wireless microphone operations as part of its testing in this proceeding, and the Coalition has every confidence that the Laboratory has both the capability and expertise to conduct its tests without the "assistance" of interested third parties.

Indeed, Shure's *ex parte* hypothetical is so short on specifics that a third party cannot verify its validity. For example, the microphone interference threshold which is stated without justification, and the bandwidth in which the power is calculated is not specified. Moreover, Shure's analysis wrongly assumes that the white space device constantly transmits at theoretical maximum power of 100 mW, failing to account for the fact that real world devices will employ transmit power control to use the minimum power necessary, thus transmitting at a substantially lower average power. In contrast, Shure has assigned its wireless microphone a transmit power of only 10 mW, notwithstanding the fact that most, if not all, available wireless microphones are capable of operating at much greater power, some as high as 100 mW.¹⁷

http://www.shure.com/ProAudio/Products/WirelessMicrophones/us_pro_ULXP_content ("Automatic Frequency Selection provides a straight shot to a clear channel.") (last visited June 29, 2007).

¹⁴ See, e.g., Intel Reply Comments, at 25; Ex parte letter from Marjorie J. Dickman, Intel Corp., to Marlene H. Dortch, at 6 (Mar. 29, 2005).

¹⁵ See Shure *ex parte* at 22-25; see, e.g., UR1 Wireless Bodypack Transmitter Features, available at http://www.shure.com/ProAudio/Products/WirelessMicrophones/us_pro_UR1_content (last visited June 29, 2007).

¹⁶ Shure *ex parte* at 6.

¹⁷ Some wireless microphones made by Shure and other manufacturers include the capability to transmit at powers up to 100 mW, the theoretical maximum of a personal/portable white space device. See, e.g., UR1 Wireless Bodypack Transmitter Features, available at http://www.shure.com/ProAudio/Products/WirelessMicrophones/us_pro_UR1_content (last visited June 29, 2007); Specifications for MX692 Wireless Boundary Microphone, available at http://www.shure.com/ProAudio/Products/WirelessMicrophones/us_pro_MX692-C_wless_content (last visited June 29, 2007); ULX Wireless System Specification Sheet, at 2, available at

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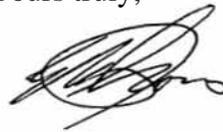
In short, while the Coalition welcomes rigorous testing to confirm that personal/portable white space devices will protect wireless microphone operations, this goal is best served if the Commission fashions and relies on its own objective, independent tests.

* * * *

The White Space Coalition appreciates the extensive wealth of film and television programming content and live performances facilitated by legal use of wireless microphones, and it has devoted considerable time and attention to ensuring that these uses will be protected by personal/portable white space devices. But the Commission should not lose sight of the fact that these legal uses—while important—are dwarfed by illegal wireless microphone use that, combined with Shure’s proposals, could substantially deprive the American public of many benefits of the white spaces.

If Shure wants to legitimize the use of TV band microphones for “personal consumer purposes,”¹⁸ it should ask the Commission to give these microphones the same unlicensed status that every other personal consumer device in the TV bands will have. Alternatively, Shure and other manufacturers could make the illegal use of their products lawful by obtaining spectrum for wireless microphones in the upcoming 700 MHz auction or in secondary markets. As a third alternative, manufacturers could take meaningful steps to limit the unlawful use of their products in the TV bands. But it is completely untenable to punish millions of Americans by depriving them of countless innovative broadband services in the white spaces in order to provide broad new protections for illegal conduct. The Commission should reject Shure’s proposal out of hand.

Yours truly,



Edmond J. Thomas
Senior Technology Policy Advisor

http://www.shure.com/stellent/groups/public/@gms_gmi_web_ug/documents/web_resource/us_pro_ulx-specsheet.pdf (last visited June 29, 2007); User Guide, PGX1 Wireless Bodypack Transmitter & PGX2 Handheld Transmitter, at 9, available at http://www.shure.com/stellent/groups/public/@gms_gmi_web_ug/documents/web_resource/us_pro_pgx_wireless_en_ug.pdf (last visited June 29, 2007).

¹⁸ See note 9, *supra*.