

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington D.C. 20554**

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In the Matter of )	
Complaint of Public Interest Spectrum )	Docket No. _____
Coalition (PISC) Against Shure, Inc., )	
Nady Systems, Inc., VocoPro, Audio2000, )	
Sennheiser Electronic Corporation, Audix )	
Microphones, Electro Voice, Hisonic )	
International, Inc., Pyle Audio, <i>et al.</i> )	
_____ )	
Petition To Create A General Wireless )	RM- _____
Microphone Service (GWMS) )	
_____ )	

To: Office of the Secretary, Federal Communications Commission

**INFORMAL COMPLAINT AND PETITION  
OF  
THE PUBLIC INTEREST SPECTRUM COALITION**

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July 16, 2008

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To: Office of the Secretary, Federal Communications Commission

**INFORMAL COMPLAINT AND PETITION FOR RULEMAKING**

Media Access Project, on behalf of the Public Interest Spectrum Coalition (PISC), submits the attached *Informal Complaint* and *Petition for Rulemaking* pursuant to Rules 1.41 and 1.401, 47 CFR §§1.41, 1.401. PISC requests that the Commission:

- ! Begin an investigation against Shure, Inc., and the other manufacturers listed in the informal complaint, for willfully and knowingly marketing and selling wireless microphones to unauthorized users for ineligible purposes in violation of Part 74, Subpart H, and for engaging in deceptive advertising practices designed to persuade ineligible users such as houses of worship, theaters, corporate event venues, and members of the general public that they could legally purchase and operate wireless microphones operating on vacant broadcast UHF Channels without a license and for purposes prohibited by the Commission;
- ! Grant a general amnesty to all unauthorized users of wireless microphones deceived by the illegal and deceptive marketing of manufacturers, permit use of the illegal equipment on a going forward basis until the Commission authorizes the proposed GWMS, and require those manufacturers that engaged in illegal marketing to migrate the unauthorized users of Part 74, Subpart H equipment to the new GWMS by replacing equipment authorized for Part 74, Subpart H with equipment authorized for use in the GWMS;
- ! Immediately reclassify all licensed wireless microphone systems operating pursuant to Part 74, Subpart H as secondary to all advanced wireless service (AWS) and public safety systems

authorized to operate on television Channels 52-69 following the shut off of analog television transmission;

- ! Order that manufacture, sale, and advertisement for sale of wireless microphone systems operating on channels 52-69 cease immediately; and
- ! Create a new “General Wireless Microphone Service” (GWMS) licensed by rule pursuant to Section 307(e) to operate on vacant broadcast UHF channels below Channel 52 on a secondary basis to broadcast licensees and individually licensed wireless microphone systems, and authorized on a primary basis to operate on the 2020-25 Band currently authorized for broadcast ancillary service (BAS) and under consideration for reallocation in Docket Nos. WT 07-195, WT 04-356 (“AWS-2/AWS-3 *Proceeding*”).

As explained below, the Commission must grant this complaint and *Petition* on an expedited basis to prevent interference with public safety and commercial systems licensed to operate in the bands currently allocated to channels 52-69, and returned by broadcasters as part of the migration to digital television. Failure to act on this complaint and *Petition* will expose public safety users and subscribers to commercial wireless services to the risk of harmful interference, threaten the public safety and undermine the expected digital dividend from the recent 700 MHz auction.

Action on these pleadings may also assist the Commission in resolving pending issues in Docket No. 04-186, allowing the Commission to make the broadcast “white spaces” available for much needed broadband deployment in rural and underserved rural areas. Although Google and others have recently offered to compromise on the matter of protection for wireless microphones through the use of wireless “beacons” that mimic an active DTV signal, some unauthorized users have objected on the grounds that they would not be eligible for such beacons. *See Ex Parte* Comments of the Broadway League, Docket No. 04-186, at 2 (filed June 18, 2008). While PISC cannot support rewarding unauthorized users with status as protected “incumbents” based on ongoing violation of Commission rules, and therefore opposes making “beacons” available to unauthorized users or

granting the proposed GWMS superior rights to devices authorized in Docket No. 04-186, creating a legal status for these unauthorized users will permit them to “come into the light” and engage in constructive discussions around legitimate interference concerns.<sup>1</sup> As a first step in addressing such concerns, as well as addressing the need for new channels after the digital transition eliminates the availability of UHF Channels 52-69, PISC recommends authorizing the GWMS to use the 2020-2025 MHz channel potentially available following resolution of the AWS-2 and AWS-3 proceeding pending before the Commission.

### SUMMARY

For many years, Commission rules have authorized the use of wireless microphones operating on the unused channels allocated to television broadcasting, the so called broadcast “white spaces,” for limited purposes related to the production of broadcast programming. *See In re Amendment of Part 2, and Subpart D, Part 74, of the Commission’s Rules and Regulations With Respect to the Use of Wireless Microphones*, 63 FCC.2d 535 (1977) (“1977 Wireless Microphone Order”). While broadcasters benefit enormously from this use of the white spaces for production of high-quality live programming – such as at sporting events or in live-action news – broadcasters have repeatedly urged the Commission to impose severe limits on other possible eligible users for fear that widespread use will cause interference with television viewing. *See Review of Technical and Operational Requirements: Part 74-D Broadcast Remote Pickup Service; and Part 74-H Low Power Auxiliary Station*, 59 Rad. Reg.2d 1120 (1986) (opposing expanding eligibility to cable operators). As a result,

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<sup>1</sup>PISC notes that failure to resolve the question of unauthorized users of wireless microphones should, as a practical matter, have little impact on resolution of Docket No. 04-186. Unauthorized users have no legal right to claim protection as against uses officially authorized by the Commission.

the Commission's rules governing these wireless microphone systems, Part 74, Subpart H, 47 CFR §74.831, *et seq.*, impose strict limits on both the class of potential users of wireless microphones operating in the broadcast bands, and strict limits on the uses of such systems even by appropriate uses.

However, as a result of deliberate, deceptive, and aggressive marketing by manufacturers of wireless microphones, unauthorized use by ineligible users has become widespread. This creates a danger to the public safety and commercial systems that will operate on Channels 52-69 following the transition to digital television. This danger is further heightened by the fact that some manufacturers sell models that *only* work on UHF channels 52-69. Unauthorized users with these wireless microphones will be unable to avoid operating on the same frequencies as public safety and commercial wireless services, even where they are aware of the danger and actively try to avoid causing harmful interference.

The Commission must therefore take immediate action to prevent further risk of harmful interference on Channels 52-69, migrate existing unauthorized users to a new – and legal – home, and require the manufacturers that planned and profited from this illegal activity to pay for the migration.

**A. Manufacturers Have Deliberately Violated The Commission's Rules And Marketed Wireless Microphones to the General Public.**

Only broadcast licensees and networks, cable TV system operators, motion picture and TV producers, and licensees of the former MMDS/"wireless cable" service<sup>2</sup> may use Part 74, Subpart H

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<sup>2</sup>The MMDS service was redesignated the Broadband Radio Service (BRS) in 2004. Although BRS is no longer a "wireless cable" service engaged in video production, the Commission's rules remain unchanged.

wireless microphones (hereinafter “wireless microphones”).<sup>3</sup> See 47 CFR §74.832(a). Further, this narrow class of users must apply for a license to operate the systems, and may use these wireless microphones only for limited purposes related to the production of television or cable programming or the production of motion pictures. See 47 CFR §74.831.

Over the years, however, the manufacturers listed in this complaint<sup>4</sup> – particularly Shure, Inc. -- marketed and sold equipment to ineligible users for unauthorized purposes in willful and knowing violation of the Commission’s rules. As detailed in the attached complaint, Shure and other manufacturers developed marketing materials that targeted houses of worship, theaters, musicians, DJs, karaoke enthusiasts, business meeting hosts and convention centers, and members of the general public. These materials were designed to entice unsophisticated and unauthorized users into spending hundreds, sometimes thousands, of dollars on equipment they could not legally use. This is in express violation of the Commission’s rules. This illegal marketing campaign has proven so successful (and profitable) for the wireless microphone manufacturers that they have expanded it to the point where the number of unauthorized users dwarfs the number of licensed users by an order of magnitude, creating an unprecedented risk of harmful interference with the new public safety and commercial

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<sup>3</sup>PISC observes that some wireless microphones are authorized in different bands. This filing addresses only wireless microphones operating on the bands authorized by Part 74, Subpart H.

<sup>4</sup>The manufacturers listed in the Complaint are: Shure, Inc., Nady Systems, Inc., VocoPro, Audio2000, Sennheiser Electronic Corporation, Audix Microphones, Electro Voice (a subsidiary of Basch Communications Systems), Hisonic International, Inc., and Pyle Audio. Merchants that have sold wireless microphones to unauthorized users for illegal uses, and distributed illegal marketing material, are: H&F Technologies, Inc., B&H Foto & Electronics, Inc., Amazon.com, Kato Electronics, Inc., AVSuperstor (a division of Aatronics, Inc.), LoudKaraoke.com, Karoke.com, LLC, Karoke Warehouse, Dumar Systems, Inc. (dba DB Karoke), BuyNow, Inc., Circuit City Stores, Inc. Absent evidence that the merchants knowingly participated with the manufacturers, however, PISC recommends treating these merchants as victims of the manufacturers rather than as co-conspirators.

services that will operate on Channels 52-69.

To illustrate the dimensions of the problem, PISC notes that as of today the Commission's licensing database indicates that there are fewer than 1,000 active licenses for low-power broadcast auxiliary service under Part 74 – a number which includes systems other than wireless microphones. By contrast, in 2006, one industry author estimated there were “400,000 wireless microphones in use in the United States alone — in concert halls, musical theaters from Broadway to elementary schools, houses of worship, film sets, sports arenas, conferences and conventions, and karaoke bars to name just a few of the venues in which they've taken hold in a big way.”<sup>5</sup> In other words, in 2006, there were *more than 400 times* as many illegal wireless microphone systems as legal wireless microphone systems. As the popularity of these systems among unauthorized users continues to grow – in no small part from the aggressive and deceptive marketing campaigns of wireless microphone manufacturers – one can only imagine how many more unauthorized users scattered around the country have added to the 2006 estimate in the last two years. The current number may well exceed one million.

**B. The Digital Transition Makes The Rules Violation Impossible To Ignore.**

Because the widespread harmful interference to broadcast reception predicted by the broadcasters from use of the broadcast white spaces did *not* occur, and because use of this valuable spectrum proved beneficial (albeit limited by the restrictions on the devices), the manufacture and sale of so many “pirate” broadcast transmitters went largely unnoticed by the Commission. This period of “benign neglect” must now come to an end as a result of the impending digital transition and

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<sup>5</sup>Paul D. Lehrman, “Can You Hear Me Now? The Wireless Crunch Is Coming,” *Mix Magazine*, May 1, 2006, available at: [http://mixonline.com/mag/audio\\_hear\\_2/index.html](http://mixonline.com/mag/audio_hear_2/index.html) (Last visited July 9, 2008).

reallocation of UHF channels 52-69. As of February 17, 2009, public safety licensees and winners of the 700 MHz auction will begin deploying public safety systems and networks designed for advanced wireless services on all these channels. While licensed users will no doubt migrate to other available bands, the widespread unauthorized use among the general population utterly unaware of the potential for harmful interference with these new licensees will create a significant risk of harmful interference. The Commission therefore cannot continue to ignore the possibility of “pools” of harmful interference that may undermine consumer adoption of commercial systems and create a serious risk to public safety, especially where ineligible users make intense use of wireless microphones, unaware of the unauthorized nature of their use and their possible interference with these new systems.

Investors and consumers alike have high hopes for these new systems operating in the broadcast bands. Winners of the commercial licenses spent over \$19 billion for the right to create these wireless systems; the new licensees have publicly announced aggressive plans to deploy services that promise a wealth of benefits to consumer and enterprise customers. Further, the Commission and others have anticipated that the deployment of an interoperable public safety broadband service – as well as the voice licenses already distributed – will provide critical tools for the public safety community that will significantly advance the ability to protect the homeland, respond to natural catastrophe, and improve the overall ability of first responders to do their jobs.

Indeed, even lawful operations within these bands by licensed users of Part 74, Subpart H devices may create the danger of harmful interference. In 2003, when the Commission redesignated a number of broadcast auxiliary systems (BAS) as secondary to new licensees on bands 52-69, *In re Broadcast Auxiliary Service Rules*, 17 FCCRcd 22979 (2003), the Commission failed to explicitly



designate licensees under Part 74, Subpart H as secondary, and continued to permit manufacture and sale of wireless microphones and other “low-power auxiliary stations” (LPAS) operating on Channels 52-69. Because Subpart H licensees are designated secondary only to broadcasters, 47 CFR §74.803(b), and because they are senior users to the new licensees, the only possible reading of the Commission’s rules as written is that licensed wireless microphone users enjoy superior rights to the winners of the 700 MHz auction and public safety licensees.

To grasp the immediacy and urgency of the situation, one need only imagine the problem of first responders summoned to an emergency at a performance of *The Little Mermaid*, only to discover that the radio systems they rely upon to penetrate walls and provide medical telemetry have encountered an ocean of interference from the intense unauthorized use of wireless microphones apparently common on Broadway.

The Commission should therefore take immediate action to designate even licensed wireless microphone operators as secondary to commercial AWS and public safety licensees operating on Channels 52-69. The Commission should further prevent the sale of any wireless microphone equipment – even for authorized uses in the hands of licensees – that operates on these bands. While there is little risk from existing licensed systems, especially once the Commission clarifies their secondary status, the continued manufacture and sale of devices operating on Channels 52-69 to unauthorized users continues the danger of interference to commercial and public safety operations.

Although the Commission has a responsibility to stop the proliferation of unauthorized uses and to migrate the unauthorized users off UHF Channels 52-69 to mitigate the risk of harmful interference to new services, it should do so in a way that preserves the beneficial effects of widespread use of the vacant broadcast channels and<sup>2</sup> in a manner that does not, despite the

predictions of doom from broadcasters, create harmful interference with free over the air broadcasting. Further, while Broadway producers and other ineligible users clearly violate Commission rules, the Commission must consider that these ineligible users have not done so in a “willful and knowing” manner. *See* 47 USC §501. Rather than treating these ineligible users as “radio pirates,” the Commission should treat them as what they are – innocent victims of the willful and knowing violations of manufacturers.

**C. The Commission Should Authorize Members of the Public Deceived by Wireless Microphone Manufacturers To Use Wireless Microphones In A Non-Interfering Manner, Paid For By the Manufacturers That Violated the Rules and Deceived the Public.**

PISC stresses that members of the public who have purchased and used these systems in violation of the Commission’s rules are victims of the deliberate violations of Shure and others.<sup>6</sup> That members of the public have filed comments that amount to admission of a felony demonstrates the general attitude that if it were illegal for Shure (and others) to sell them these devices, Shure would not advertise them so blatantly and make them so widely available. Therefore, while there appears some evidence that sophisticated users may have become aware of that continued use of wireless microphones violates Commission rules,<sup>7</sup> PISC urges the Commission to show leniency to all

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<sup>6</sup>There is a certain irony in the way in which NAB has embraced this widespread violation of Commission rules in its efforts to prevent productive use of the broadcast white spaces. Not only should this cast further doubt on the NAB’s oft-repeated interference concerns, it stands in marked contrast to the continuing insistence that applicants for low power FM licenses that have ceased illegal radio operation remain barred from obtaining a license because of the need to rigorously enforce the Commission’s rules. If the NAB’s concerns in the context of the LPFM proceeding were applied to the numerous commentators in this proceeding that have confessed to using wireless microphone systems for unauthorized purposes, the Commission would find itself quite busy arresting clergymen, Broadway producers, and other misinformed law abiding citizens.

<sup>7</sup>For example, the Broadway League has urged rejection of Google’s beaconing proposal because “should such a beacon ever come to be realized, FCC regulations may prohibit many in-

unauthorized users. The Commission should provide a way to migrate unauthorized user to a legal wireless microphone service that will not create a risk of harmful interference, and should require those that willfully and knowingly violated the Commission's rules – the manufacturers that marketed the wireless microphones to ineligible users for unauthorized purposes – to pay the cost associated with this migration.

**1. Commission Authority Under Section 307(e).**

Fortunately, Congress has already created a tool for the Commission to address widespread, innocent, unauthorized use. In 1982, to address the widespread failure of users of citizens band (“CB”) radio to obtain individual licenses, Congress authorized the Commission to license certain services by rule. *See* Communications Amendment Act of 1982, Pub. L. 97-259, §107, *codified at* 47 USC §307(e). Because Congress delegated to the Commission the power to define the meaning of these services, *see* 47 USC §307(e)(3), the Commission has authorized a wide variety of voice services under Section 307(e). *See, e.g., In re Amendment of Part 95 to Establish a Very Short Distance Two-Way Radio Service*, 11 FCCRcd 12977 (1996) (creating Family Radio Service). Just as the Commission used this grant of Congressional authority to convert thousands of unauthorized CB users into authorized users in the 1980s, the Commission can and should convert the thousands

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cumbent white space users from operating such devices.” *See Ex Parte* Comments of the Broadway League, Docket No. 04-186, at 2 (filed June 18, 2008). It is difficult to read this as anything other than an admission that Broadway League has become aware that its continued use of wireless microphones violates the Commission's rules and would therefore render them ineligible for the proposed beacons. Still, while the Commission might chose to act differently where unauthorized users clearly know that they are in violation of the Commission's rules, as the NAB has demanded in other proceedings, PISC maintain that where, as here, it does not appear that users knew they were violating Commission rules when they invested thousands of dollars in equipment marketed to them by authorized manufacturers knowledgeable of the Commission's rules, the Commission should show leniency.

of unauthorized users deceived by manufacturers into authorized users of a new “General Wireless Microphone Service” (GWMS).

## **2. Reallocation of the 2020-2025 MHz Band.**

The Commission could simply authorize the new GWMS in the existing UHF broadcast bands below Channels 52-69. As it would appear that the use of wireless microphones for a wide variety of purposes by the general public has not caused the interference apocalypse previously predicted by broadcasters, the Commission could simply authorize the unauthorized users by rule, provided they obtain new equipment that will not operate above Channel 51. Doing so, however, may create significant crowding for GWMS users absent UHF Channels 52-69, given their secondary status to both full power broadcasters and licensed LPAS users. Further, numerous unauthorized users of wireless microphones, the future GWMS users, have expressed doubt that they can co-exist with unlicensed devices authorized by the Commission in Docket No. 04-186.

A happy confluence of circumstances, however, allows the Commission to provide additional spectrum for GWMS outside the broadcast bands, and therefore removed from any 04-186 unlicensed devices. Recently, the Commission proposed reallocating spectrum between the AWS-2 and AWS-3 bands. *In re Service Rules for Advanced Wireless Services in 2155-2175 MHz*, 23 FCCRcd 9295 (2008) (“*AWS-2/AWS-3 Proceeding*”). In this proceeding, the Commission proposes to take a 5 MHz pair previously allocated to AWS-2, the 2020-2025 MHz and 2175-2180 MHz pair, and reallocate the 2175-2180 band to AWS-3 to protect AWS-1 and AWS-2 licensees from interference with the proposed new service for AWS-3. This reallocation would create an unused channel of 5 MHz at 2020-2025, already authorized for broadcast auxiliary services (BAS), a category that includes wireless microphones.

If the Commission approves the reallocation in the AWS-2/AWS-3 proceeding, it could then redesignate the 2020-2025 MHz band for the GWMS on a primary basis. Operators in the GWMS that fear interference from any unlicensed white spaces devices authorized under Part 15, or in need of extra spectrum, could access the 2020-2025 MHz band. For those concerned that bands outside the broadcast bands would not prove as useful, PISC notes that Ofcom in the United Kingdom recommended migrating wireless microphone users out of the broadcast bands to a single 8 MHz channel.<sup>8</sup> Similarly, in Docket No. 04-186, Marcus Spectrum Solutions has described how a transition to digital wireless microphone systems at alternative frequencies would improve both audio performance and spectrum efficiency.<sup>9</sup> While these proposals demonstrate that a number of experts believe that wireless microphones could both function entirely outside the broadcast bands, and that removal of these services from the broadcast bands would improve spectrum efficiency, The PISC proposal does not go nearly as far. Rather, PISC simply recommends this 5 MHz channel as additional available spectrum should the 2020-2025 band become available and should the Commission determine that the additional allocation would serve the public interest.

### **3. Authority to Order Manufacturers To Pay Relocation Costs.**

Given that many ineligible users have invested thousands of dollars in Part 74, Subpart H systems, requiring these users to pay for new, authorized equipment would impose a heavy burden. Further, it would potentially generate huge profits for the manufacturers whose illegal marketing created the current situation. Fortunately, the Commission need not require such an inequitable

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<sup>8</sup>OFCOM (Office of Communications), *Digital Dividend Review* policy statement (December 13, 2007), available at <http://www.ofcom.org.uk/consult/condocs/ddr/statement/>.

<sup>9</sup>*See Ex Parte* Comments of Marcus Spectrum Solutions, LLC, in ET Docket No. 04-186 (filed May 5, 2008).

solution to avoid the problem of harmful interference with public safety systems and commercial systems on UHF Channels 52-69. Instead, the Commission can and should order the wireless microphone manufacturers to pay for the migration of users from unauthorized to authorized service by replacing the unauthorized equipment with new equipment that will not operate on Channels 52-69, and will operate on the 2020-2025 MHz band if the Commission authorizes that band for GWMS use.

The Commission has the authority to levy significant fines against manufacturers for violation of the Commission's rules on the marketing and sale of wireless devices. Sections 4(i), 302(b), 501, 502, 503, and 510 of the Communications Act provide the Commission with substantial authority to fine manufacturers that willfully and knowingly market and sell equipment in violation the Commission's rules, and to order the forfeiture of equipment marketed, sold or shipped in violation of Commission rules. While Section 504(a) generally specifies that monetary forfeitures shall be paid into the Treasury, the Commission has broad power to enter into consent agreements with violators. In this case, in lieu of fines and consistent with its authority under Sections 4(i) and 510, manufacturers could simply agree to exchange equipment illegally marketed and sold and replace it with new equipment authorized under the GWMS rather than face the prospect of fines up to \$11,000 per violation per day.

In addition, the courts have recognized that the Commission has broad power to order that licensees and equipment manufacturer pay to migrate users when necessary. *See, e.g., Teledesic LLC v. FCC*, 275 F.3d 75 (D.C. Cir. 2001). Here, the Commission can and should exercise this broad authority to require the equipment manufacturers whose behavior created this vast pool of unauthorized users to absorb the cost of migrating them to a new, authorized service using properly

certified and properly marketed equipment.

**D. PISC Members Have Significant Interest In The Matter.**

PISC does not file this complaint and accompanying *Petition for Rulemaking* simply from a desire to see the Commission enforce its rules. PISC members have significant interests that the Commission must protect. First and foremost, as subscribers to the forthcoming commercial services available in the 700 MHz band, and as the ultimate beneficiaries of public safety services, PISC members have an urgent interest in seeing this potential interference problem resolved. In addition, PISC members Champaign Urbana Wireless Network and the Open Source Wireless Coalition have a further interest in the management and deployment of open systems under the Commission's 700 MHz "C Block" rules. As developers of applications and devices for open wireless platforms, PISC members have a considerable interest in ensuring that the problem of potential interference with C Block operations by unauthorized users is dealt with expeditiously.

Finally, as meeting organizers and other potential users of wireless microphones, PISC members have an interest in obtaining access to legal, authorized wireless microphones. PISC members make frequent appearances before the Commission, and should not be required to ascertain whether a speaking engagement in a convention center will require the knowing use of unauthorized equipment in an illegal manner. By creating an authorized general wireless microphone service, the Commission will eliminate the pernicious effect that occurs when its rules are widely and constantly undermined.

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International, Inc., Pyle Audio, *et al.* )  
\_\_\_\_\_ )

To: Office of the Secretary, Federal Communications Commission

**INFORMAL COMPLAINT**

Media Access Project, on behalf of the Public Interest Spectrum Coalition (PISC),<sup>10</sup> hereby submits this complaint against Shure, Inc., Nady Systems, Inc., VocoPro, Audio2000, Sennheiser Electronic Corporation, Audix Microphones, Electro Voice (a subsidiary of Basch Communications Systems), Hisonic International, Inc., Pyle Audio, and any other manufacturers of wireless microphones authorized for use under Part 74, Subpart H that have violated the Commission's rules by (1) marketing and selling equipment limited by Commission rule to certain classes of users to the general public; (2) marketing and selling equipment for purposes that violate the Commission's rules; and, (3) deceiving the public as to the requirement for a Commission license and the limitations imposed by the Commission on the use of the devices. Therefore, pursuant to Part 1.41 of the

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<sup>10</sup>The Public Interest Spectrum Coalition Consists of, in alphabetical order: The CUWiN Foundation (CUWIN), Consumer Federation of America (CFA), Consumers Union (CU), EDU-CAUSE, Free Press (FP), Media Access Project (MAP), the National Hispanic Media Coalition (NHMC), the New America Foundation (NAF), the Open Source Wireless Coalition (OSWC), Public Knowledge (PK), and U.S. PIRG.

Commission's Rules,<sup>11</sup> 47 CFR §1.41, PISC requests that the Commission take immediate action against the parties named herein and commence a full investigation to determine the extent of the violations by the parties named herein and other manufacturers of Part 74, Subpart H devices.

## **I. COMMISSION AUTHORITY.**

Sections 4(i), 301, 302(b), and 303(n) of the Communications Act convey upon the Commission broad authority to regulate the use of the public airwaves, including regulation of the marketing and sale of equipment. In particular, section 302(b) prohibits the manufacture, marketing or sale of any device in violation of the Commission's rules. The Commission's rules on marketing prohibit offering devices for uses or to users in violation of Commission rules. *See* 47 CFR §§2.803(a), (g). The Commission also prohibits "in any advertising matter, brochure, etc." use or reference to FCC authorization "in a deceptive or misleading manner." 47 CFR §2.927(c).

In the past, the Commission has invoked this authority against the marketing and sale of wireless microphones to users and for uses prohibited by the Commission's rules, *see In re FLECO Corp. Of Chino, California*, Citation No. C20043292003 (June 24, 2004), and as against the marketing and sale of prohibited equipment such as radar detectors and cell phones. *See In re Monty Henry*, 23 FCCRcd 8293 (2008); *In re Gain Saver*, 22 FCCRcd 13956 (2007). Under the power granted by Sections 308(b), 501, and 510, the FCC may investigate complaints of possible violations, require the production of records or other information from possible violators, confiscate equipment marketed or sold in an unauthorized manner, and punish any violation by forfeiture of up to \$11,000

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<sup>11</sup>Because this complaint bears on the *Petition for Rulemaking* filed simultaneously with this complaint, and because the behavior at issue raises complex problems impacting the digital transition and implicates thousands of consumers and businesses tricked into ongoing violation of the Commission's rules, PISC has elected to file this complaint under the Commission's more flexible informal complaint procedures rather than filing a formal complaint with the Enforcement Bureau.

per day per offense.

Part 74 Subpart H governs use of wireless microphones and other “low power auxiliary systems” (LPAS) as an adjunct to video programming production. 47 CFR §§ 74.801-74.882. Specifically, Subpart H prohibits use of LPAs such as wireless microphones without a license, limits the class of eligible licensees to producers of television or cable programming and production of motion pictures, and explicitly prohibits even authorized licensees from using licensed systems for other purposes. *See* 47 CFR §§74.831-32. The Commission adopted these restrictions at the urging of broadcasters as a means of minimizing the danger of harmful interference. *See, generally, 1977 Wireless Microphone Order, 63 FCC2d 535 (1977).*

As demonstrated below, Shure and the other manufacturers listed above willfully and knowingly marketed, sold, and shipped for sale wireless microphones, devices regulated under Section 302, to parties not eligible for licenses under Part 74 Subpart H, and for purposes not authorized under Part 74, Subpart H. This violates Section 302(b) of the Act and Part 2.803 of the Commission’s rules. Furthermore, these manufacturers have referenced FCC equipment certifications and other FCC rules in a deceptive manner, intended to convey to the public the impression that the FCC authorized the general public to use the devices for purposes actually unauthorized by the Commission’s rules. Such conduct violates 47 CFR § 2.927(c), and 47 USC §§ 301, 302(b).

## **II. EVIDENCE OF WILLFUL AND KNOWING VIOLATION BY MANUFACTURERS.**

For the Commission to impose civil or criminal sanctions, it must find that a party “willfully and knowingly” violated the Commission’s rules or provisions of the communications. 47 USC §501. In recent months, the Commission has received – indeed, has had thrust upon it – evidence of widespread unauthorized use of wireless microphones by users ineligible for licenses as part of the

record in Docket No. 04-186. For example, the Microphone Interest Coalition (MIC) provides a lengthy list of members and activities that, while intended to impress upon the Commission the broad use of wireless microphones and the importance of protecting them from interference from other users, could serve as the basis of a Notice of Apparent Liability.<sup>12</sup> Ineligible users claiming protection for unauthorized uses include churches, theater groups, business centers and others from all walks of life and from around the country. But while the comments of some large, sophisticated users appear to demonstrate an awareness that their uses violate Commission rules, *See Ex Parte* Comments of the Broadway League, Docket No. 04-186, at 2 (filed June 10, 2008), the vast majority of these comments show that the parties do not realize that their purchase and use of Part 74, Subpart H wireless microphones constitutes a felony subject to fine or imprisonment.

The nearly 175 pages of evidence submitted as exhibits, however, clearly demonstrate that Shure, VocoPro, and the other manufacturers and merchants have deliberately marketed and sold systems for these unauthorized uses. Further, the manner in which these manufacturers describe the FCC rules and their FCC product certifications clearly intends to convey that purchase and use by the targeted ineligible users and the general public complies with FCC rules. Accordingly, while the Commission should take no action against the members of the public deceived by these illegal and deceptive marketing tactics, the Commission can and should take immediate action against the named manufacturers and any others determined to have engaged in the marketing and sale of wireless microphones in a manner that violates Commission rules.

**A. Marketing To Ineligible Licensees, For Expressly Unauthorized Purposes.**

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<sup>12</sup>*See, e.g.*, Comments of the Microphone Interest Coalition, Socket No. 04-186 (filed August 15, 2007) (listing numerous members, ineligible for licenses, and describing their use and reliance on Part 74, Subpart H wireless microphones for purposes not authorized for the service).

It would be sufficient, perhaps, to observe that the manufacturers make their products freely available on their website and through such consumer outlets as Amazon.com and Circuit City without any indication of the limitations imposed by the Commission's rules on the class of users or use. Indeed, the Commission has previously cited parties for violation of Section 302(b) for making devices such as cell phone jammers available to the general public without the need for any showing that unauthorized users actually purchased the device. *In re Monty Henry*, 23 FCCRcd at 8295 (citation based on website which marketed to general public a device restricted to police use). But the evidence provided in this complaint goes beyond a mere claim that wireless microphone operators made their products broadly available to eligible and ineligible users alike. To the contrary, the evidence shows that Shure and others engaged in extensive marketing to ineligible users for expressly unauthorized purposes.

**1. Willful and Knowing Marketing to Churches In Violation of Section 302(b) and the Commission's Rules.**

In perhaps the most egregious example of targeted marketing to unsophisticated ineligible users for unauthorized purposes, Shure offers a self-described "comprehensive" 56-page guide called "Wireless Microphone Systems and Personal Monitor Systems For Houses of Worship."<sup>13</sup> The opening chapter makes clear both the intent of this handbook to serve as marketing material and its general applicability to all houses of worship, not merely those that televise their services through broadcast or cable programming:

There's a strong sense of presence as the circle of bowed heads and clasped hands

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<sup>13</sup>See Exhibit A, Introduction to Wireless Microphone Systems and Personal Monitor Systems for Houses of Worship, available at [http://www.shure.com/stellent/groups/public/@gms\\_gmi\\_web\\_ug/documents/web\\_resource/us\\_pro\\_intropsm\\_how.pdf](http://www.shure.com/stellent/groups/public/@gms_gmi_web_ug/documents/web_resource/us_pro_intropsm_how.pdf).

breaks, ready to meet the challenge of the day. As the worship leader observes the eyes and faces of each member of the team – from the pastor to the back up vocalists – he senses a peace and a confidence knowing that they’ve done their job of practice and preparation and that every note is in place . . . Certainly the worship team has done their part to assure a meaningful message is delivered. However, there is even more here than meets the eye . . . or the ear. There is also audio technology.<sup>14</sup>

The guide, available to the general public on Shure’s website, purports to serve as a resource “for both experts and novices alike,” boasting that advances in technology make it possible for people who are “less technical and have smaller budgets to use these audio products to provide dramatically improved sound *for the congregation* as well as more control and flexibility for the praise and worship team.” (Emphasis added) The guide discusses the advantages of the wireless technology for outreach events and other non-broadcast related activities. Exhibit A at 16.

Nowhere, however, in this “comprehensive” guide does there appear any reference to how to utilize these audio technologies *in conjunction with broadcast, cable or movie program production*, the only authorized purposes under the regulations and, one would expect, of most concern to houses of worship eligible for Part 74, Subpart H licenses. Perhaps most tellingly, nowhere does this “comprehensive guide” provide any instruction on how a house of worship buying a Shure wireless microphone system can obtain a needed FCC license – which one would imagine would be a *sine qua non* for houses of worship eligible for licensees and seeking to use the advertised Shure systems for authorized uses. To the extent the brochure does allude to FCC restrictions, the guide limits itself exclusively to the obligation to avoid active television channels. Even here, Shure takes great pains to explain how this is for the benefit of the purchaser, making only passing reference to FCC requirements. Shure informs its customers that “[m]ost wireless microphones share the same

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<sup>14</sup>*Id.* at 4.

frequencies used by TV stations, both VHF and UHF. Since TV stations are much more powerful than wireless microphones - and since the Federal Communications Commission (FCC) requires you to do so - you need to avoid local TV channels, since full power television signals will likely interfere with operation of the wireless microphone system.”<sup>15</sup>

In short, rather than a booklet designed to explain to houses of worship considering wireless microphone systems the limitations on eligibility and authorized use, Shure clearly intends the booklet to assure all houses of worship regardless of eligibility that a Shure wireless microphone system is the indispensable accessory to assuring successful devotion; a must have item for every house of worship:

We, at Shure, fully understand that our audio systems are simply a conduit between your faith and your congregation. We hope this booklet helps you understand how you can use today’s technologies to express your worship more clearly and more easily.

*Id.*, at 5.

It is difficult to read this statement, especially in the context of the “Houses of Worship Guide” as a whole, as anything other than a willful and knowing misrepresentation of the Commission’s rules for the purpose of marketing devices in violation of Section 302(b). The Guide is clearly intended for all houses of worship, not the few eligible for licenses under Rule 74.832. To the extent the Guide alludes to FCC rules and restrictions, it does so in a manner designed to convey the false impression that the FCC permits use of the equipment by houses of worship for purposes unrelated to broadcast program production, a violation of Rule 2.927(c). Such conduct clearly also violates Section 302(b) and Rule 2.803.

Although Shure provides the most egregious example of direct marketing to ineligible houses

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<sup>15</sup>*Id.* at 17.



of worship, other wireless manufacturers engage in similar direct advertising to houses of worship for unauthorized purposes. Electro Voice, for example, has an entire section of its website “for the houses of worship market,” (Exhibit B) and even on its general web page devoted advertises that products such as the RE2 UHF Wireless Microphone System will meet user needs “whether you’re performing at the local rock club, lecturing at a corporate seminar, or speaking in a house of worship.”<sup>16</sup> Such general statements advertising to houses of worship as part of advertising to the general public abound on Shure equipment advertising and other equipment advertising provided in the Exhibits.

The decision of Shure and other manufacturers to target houses of worship with such an extensive advertising campaign further underscores the willful and knowing nature of the rule violations. Houses of worship, while excluded from use of Part 74, Subpart H wireless microphones, have considerable need for such acoustic augmentation. Nor are ministers, priests and rabbis likely to have sophisticated knowledge of FCC law, and therefore as a group are entirely unlikely to anticipate that Shure and others would market the equipment illegally. Finally, as demonstrated by Shure and other manufacturers, this customer base has proven an extremely effective “human shield” for lobbying purposes.

## **2. Marketing to Musicians, Disc Jockeys, Karaoke Jockeys, and Other Unauthorized Performing Arts and Public Venues Managers.**

In a trend of targeting audiences with substantial need and little sophistication, Shure also has a user guide for musicians, disc jockeys (DJs), “karaoke jockeys” (KJs), and home karaoke enthusiasts (Exhibit D). The guide begins by reassuring the unauthorized musician, DJ, or KJ

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<sup>16</sup>See Electro Voice, RE 2 UHF Wireless, available at <http://www.electrovoice.com/productfamilies/66.html> (Exhibit C).

concerned that Shure's wireless system was designed for someone else (such as an eligible user under Rule 74.831) that Shure PGX Wireless is "The New Breed of Shure Wireless System created for active musicians and presenters who also manage their own sound, Shure PGX Wireless improves our performance and simplifies your set up." Again, any mention of the requirement for an FCC license, the limits on license eligibility, and the restrictions on authorized use, are conspicuous only by their absence. In addition to outreach through the PGX Wireless Guide, Shure routinely includes phrases in its advertising of wireless microphones that highlight the suitability of the equipment for these unauthorized uses. For example, Shure advises members of the general public visiting its web page that its PG288/PG58 system is "[i]deal for lead and backing vocals in live performance or karaoke" (Exhibit D). For theatricals, whether professional or otherwise, Shure offers a separate guide for theater performers.<sup>17</sup>

Shure also offers a model targeted to convention center managers and corporate boardrooms. Shure advertises its Model MX690 for "corporate boardrooms or other applications requiring flexible configuration" (Exhibit F). With this last, Shure passes so beyond the possible realm of eligible users

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<sup>17</sup>Shure maintains this guide, as well as a veritable library of references designed to make Part 74, Subpart H systems more accessible to unauthorized users at [www.shure.com/literature](http://www.shure.com/literature) (Last visited 7/6/08). The list of materials created by Shure for "non-technical" (and ineligible) users includes (Exhibit E) the Shure "Introduction to Wireless Systems," available at: [http://www.shure.com/ProAudio/Products/us\\_pro\\_ea\\_intro](http://www.shure.com/ProAudio/Products/us_pro_ea_intro) (Last visited 7/6/08), "The Myth of Microphone Reach" (designed to explain wireless microphone range for the non-technical user), [http://shure.custhelp.com/cgi-bin/shure.cfg/php/enduser/std\\_adp.php?p\\_faqid=76](http://shure.custhelp.com/cgi-bin/shure.cfg/php/enduser/std_adp.php?p_faqid=76) (last visited 7/6/08), and a 68 page advanced treatise by Tim Vear entitled "Selection and Operation of Wireless Microphone Systems," 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) (last visited 7/6/08). This last item is particularly noteworthy, as in its 68 pages of discussion of frequency management, various FCC wireless services, and the considerations for users as diverse as aerobic instructors and community theater groups, *nowhere* does this Shure publication state that members selecting this equipment need an FCC license, or must comply with the eligibility and use restrictions.

and permissible uses that only the phrase “willful and knowing” can describe its marketing in violation of Section 302(b) and the Commission’s rules. Indeed, as if to remove all doubt of the inappropriateness of its targeted marketing, Shure notes that the unit functions “within the 518-865 MHz bands.” *I.e.*, the UHF bands authorized only for the licensed users and authorized purposes provided in Part 74, Subpart H.

As with deliberately targeting houses of worship, Shure does not stand alone when it comes to aggressive marketing to musicians, DJs and KJs – despite the complete absence of “karaoke” from the list of authorized uses under Rule 832 – conference centers, and so forth. Nady Systems touts its DKW-8U system as “perfect for public speaking, karaoke/recreational singers, guitarists, DJs and many other applications” (Exhibit G). Vocopro advertises units as insuring “an interference-free performance, no matter where you’re at,” promises that “KJs will love” it features, and that “karaoke vocalists, home entertainment enthusiasts, and club goers” will all find its systems reliable and versatile (Exhibit H at 79). Audio2000 offers a “Karaoke Equipment Guide for KJs” (Exhibit I). Sennheiser touts its equipment for “musicians, broadcasters, theater and sound contractors,” assures these authorized and unauthorized users alike that their systems are adaptable “to nearly any imaginable need[,] from small venue clubs and boardrooms to Broadway stages and stadium sized concert halls” (Exhibit J). In addition to Sennheiser and Shure, Audix Corp. and Electro Voice also advertise their products as perfect for boardroom meetings and corporate conference venues.

Indeed, marketing for karaoke purposes is so common, so outside the realm of authorized uses, and so unlikely a use for any eligible user, that it deserves special attention. These consumers are not broadcast licensees, networks, cable TV systems, or producers, and so they are barred from holding an FCC license. Users cannot claim that karaoke is the transmission of “cues and orders” for

a broadcast, program material, or a remote news broadcast - so even legitimate licensees are banned from using Part 74 microphones for karaoke. In short, *there is not a single legitimate reason that could justify marketing and sale of wireless microphones based on their suitability for karaoke.* And yet marketing to the general public – for private home use as a consumer product as well as for professional “karaoke jockeys” or entertainment clubs – is perhaps the single most popular use mentioned in marketing materials. It would be astounding if the Commission were to conclude that such widespread marketing by manufacturers is not “willful and knowing” marketing and sale of Part 74, Subpart H equipment in violation of the Communications Act and Commission rules.

Also as with the targeted marketing to houses of worship, manufacturers routinely allude to FCC certifications and the requirement to avoid operation on active UHF channels in a manner calculated to deceive the targeted public with regard to the legality of use. Shure’s technical specifications, for example, clearly identify its wireless microphone as a Part 74 device, never mention licensing, and then potentially mislead consumers by quoting the unlicensed language of §15.19(a)(3) which implies that the unit is an unlicensed Part 15 device (*See Exhibit K at 98*).<sup>18</sup> To the extent that unsophisticated users have any exposure to FCC wireless devices, it comes through the certifications on devices authorized for consumer use under Part 15. It is exceedingly difficult to imagine any other reason for this inaccurate reference to Part 15 certification, with the mandatory acknowledgment of

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<sup>18</sup>The actual wording of 47 CFR §15.19(a)(3) is

***This device complies with Part 15 of the FCC Rules.*** Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

(Emphasis added to words in §15.19(a)(3) that are not in Shure brochure.)

Part 74 certification, than as a willful and knowing effort to use FCC certifications in a deceptive manner.

Similarly, the user manual for VocoPro's UHF-5805 ("the singer's ultimate choice") includes a page called "FCC Information (U.S.A.)" (Exhibit K at 102). Text informs the reader that "this product has been tested and found to comply with the requirements for Class 'B' digital services." The text then instructs the user on the possibility of interference and how attempt to abate interference to or from the unit. Nowhere does the UHF-5805 user guide explain that the device requires a license under Rule 74.831, or provide any information on the license eligibility restrictions or use restrictions. Again, it is difficult to imagine the purpose of this "FCC Information" other than as a deliberate effort to use certification information to deceive users in violation of Rule §2.927.

In what can only be termed an ironic grace note, the VocoPro UHF-5805 "FCC Information" page concludes with the following:

NOTE: Please check the copyright laws in your country before recording from records, compact disks, radio, etc. Recording of copyrighted material may infringe copyright laws.

While giving VocoPro credit for recognizing the possibility of fair use defenses, it is indeed ironic that VocoPro feels the need to warn users against possible copyright violations while thumbing its nose at FCC licensing requirements and regulations. Still, given the ferocity with which the Recording Industry Association of America has defended its licensing restrictions, perhaps VocoPro can be forgiven in its choice of which licensing restrictions to obey and which to ignore.

### **3. Marketing to the General Public.**

In addition to these marketing materials developed for target audiences, Shure and other manufacturers also advertise to the general public and use the FCC certification information to

deceive the public as to the need for a license and as to the restrictions on license eligibility and authorized use. The VocoPro advertises its VHF-3005, for example, as “great for home entertainment, yet has what it takes to withstand the challenges of public use”(Exhibit H at 85). Shure advertises its SLX Wireless Microphone Systems as “supporting up to 20 compatible systems across multiple UHF frequency bands” for “houses of worship, lecture halls, conference rooms and mobile gear cases” (Exhibit L) The Hisonic HSU8400H UHF wireless microphone system advertises that it “provides you with proven performance and durability in a variety of settings, from churches to gymnasiums, from concert halls to broadcast booths and stadiums” (Exhibit Mat 113).

In addition to advertising material, Shure and some other manufacturers maintain resources for the general public using their products on their websites – without, of course, any indication that use of the product requires a license or that the vast majority of users are ineligible. Again, Shure holds a commanding lead in innovative marketing to the general public, in direct contravention of the Commission’s rules. Shure maintains an online library and resource center boasting reference materials for both non-technical users and technical users.<sup>19</sup> A frequently asked questions section and an interactive “find an answer” help ineligible users with all their questions on how best to achieve their intended unauthorized uses, from auctioneer systems to aerobics to DJ and Karaoke systems (Exhibit N). Shure has also thoughtfully provided for the ineligible users it markets its equipment to a useful – if inaccurate and misleading – information sheet on how unauthorized users can avoid interference with DTV systems and, after the transition, public safety and commercial wireless

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<sup>19</sup>Available at [www.shure.com/literature](http://www.shure.com/literature).

systems.<sup>20</sup> In this document, Shure emphasizes that the FCC permits wireless microphones to use all unoccupied UHF channels “just as they do now” until after the transition, at which point wireless microphone users should avoid frequencies above 698 MHz. To assist unauthorized users, both before and after the transition, Shure offers a “frequency finder” service at [www.shure.com/frequency](http://www.shure.com/frequency), which Shure informs the curious member of the general public is sufficient for compliance with FCC restrictions on the use of wireless microphones.<sup>21</sup>

Again, while Shure has the most sophisticated and aggressive marketing to ineligible licensees, it does not stand as an isolated cases. Sennheiser likewise offers a “resource” designed to reassure the general public that the transition to digital television will not impact the widespread (albeit unauthorized) use of wireless microphones.<sup>22</sup> Sennheiser, like several other manufacturers, offers a “frequency finder” service similar to that offered by Shure, to assist ineligible users in avoiding occupied UHF frequencies.<sup>23</sup> Although Sennheiser does state on a separate “frequency information page” that users must generally comply with local licensing laws in their country pertaining to wireless systems and wireless microphones, the Sennheiser materials taken as a whole clearly seek

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<sup>20</sup>Shure, “What Digital TV Means to Wireless Microphone Users,” available at: [http://www.shure.com/ProAudio/Products/us\\_pro\\_ea\\_dtv](http://www.shure.com/ProAudio/Products/us_pro_ea_dtv) (Last visited July 6, 2008) (attached as Exhibit O).

<sup>21</sup>See also Exhibit P at 127-29.

<sup>22</sup> The document, available at <http://www.sennheiserusa.com/newsite/pdfs/SennWorkWithEvoWrlss2005.pdf>, goes on to list charts with detailed “tuning schemes” for TV channels 22 through 27 (518-554 MHz), channels 40 through 45 (626-662 MHz), and channels 59 through 64 (740-776 MHz) which, we note, will be auctioned this year for exclusive use by other services (Exhibit Q).

<sup>23</sup> See <http://www.sennheiserusa.com/frequencyfinder/default.asp> (Exhibit P).

to deceive U.S. consumers as to the legality of their use.

Finally, as demonstrated by the materials included in Exhibit I, Shure, Nady Wireless Systems and VocoPro deliberately display certification information designed to confuse users with even a casual acquaintance with the now ubiquitous certification notices on consumer electronics under Part 15. For example, Nady includes a certification citing to FCC Parts 90, 74, and 15 and paraphrasing the FCC's mandatory statement on accepting interference under Part 15 (Exhibit K at 104). From context, Nady clearly intends to convey to the unsophisticated reader that – just like the cordless phone or wifi router with similar wording on the package – anyone may buy and use Nady wireless microphone for any purpose.

**B. Taken Together, The Evidence of Repeated Willful and Knowing Violation Of Commission Rules By Shure and Others Is Overwhelming.**

The evidence presented here by PISC did not take deep investigation to accumulate. Much of it is publically available on the websites of Shure and other manufacturers, and then widely distributed again by retailers of consumer electronics. The sheer volume of the material, combined with the deceptive descriptions of FCC requirements and specific targeting of unsophisticated ineligible users such as houses of worship, DJs, and corporate event sponsors makes it impossible to escape the conclusion that Shure and other manufacturers have acted with continuing reckless disregard for the Commission's rules and created a market resting almost entirely on "pirate" operations. As observed above, when manufacturers of wireless microphones have greater respect for music licenses than for wireless licenses, the Commission has failed in its responsibility to enforce the law.



### III. URGENCY OF ENFORCEMENT

The situation has persisted long enough to allow hundreds of thousands, possibly millions, of unlicensed wireless microphones operating on the UHF bands to scatter throughout the country.

According to a May 16, 2006 report in *Mix*:

[A]lthough a lot of people ignore the fact, wireless audio systems actually require a license and are really only supposed to be operated in the TV band by broadcasters and media producers.... But according to [wireless industry consultant Greg] Stanfill, only about 10 to 15 percent of the systems in use in the United States are properly licensed. Stanfill, who was president of wireless audio pioneer Vega Systems for 18 years, told *Mix*: in theory, you can be busted for this by the FCC, but unless you are incredibly stupid which has happened, but not often you'll get by with a warning.<sup>24</sup>

As this quote indicates, use is widespread and concern about compliance with FCC regulations is non-existent. The Commission can therefore expect the current situation, in which ineligible users continue to buy equipment for unauthorized uses in a manner untraceable by the Commission or by licensees experiencing interference, to continue indefinitely unless the Commission acts. But while the Commission appears to have little interest in facilitating respect for its own rules – the Commission has publicly acknowledged the current situation without taking any action against manufacturers since at least 2001, *see In re Revisions to Broadcast Auxiliary Service Rules in Part 74 and Conforming Technical Rules for Broadcast Auxiliary Service, Cable Television Relay Service and Fixed Services in Parts 74, 78 and 101 of the Commission's Rules*, 16 FCCRcd 10556, 10588 at n.150 (2001), the transition to digital television places a new urgency on the need for rapid enforcement against manufacturers and grant of the attached, separate *Petition for Rulemaking*.

As documented in the Exhibits, the equipment sold in violation of the Commission's rules operates on Channels 52-69. Indeed, some of the equipment marketed and sold to the general public

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<sup>24</sup>Available at [http://mixonline.com/mag/audio\\_hear\\_2/index.html](http://mixonline.com/mag/audio_hear_2/index.html) (Last visited 6/22/08).

*only* operates on Channels 52-69, making it impossible for these users to avoid interference even if they try.<sup>25</sup> Beginning in February of 2009, public safety entities will deploy voice and data systems in these bands, as will the winners of the commercial licenses in the 700 MHz auctions held in 2003 and 2008. Indeed, some licensees, such as Qualcomm, have begun testing new services on these bands.<sup>26</sup> The failure to address the illegal marketing by Shure and other manufacturers will continue to aggravate the already serious danger that these systems will interfere with vital public safety systems and new commercial systems.

In particular, permitting Shure and other manufacturers to illegally market wireless microphone systems for corporate venues threatens to undermine soon to be deployed commercial services. PISC fully expects that while Verizon, AT&T and other winners intend to deploy consumer-oriented services, the initial deployment and adoption will most likely occur with higher-end enterprise customers. It is these “early adopter” customers that will most likely encounter interference from the proliferation of wireless microphone systems in corporate boardrooms and conference centers. Failure to act against the continued marketing of wireless microphone systems to such corporate venues threatens to undermine the early adoption of cutting edge wireless systems offered on former UHF channels by creating widespread incidents of interference, rendering these new and expensive services unreliable for their intended audience of early adopter enterprise customers.

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<sup>25</sup>Exhibit R provides evidence with regard to wireless microphone systems that operate on 52-69 in addition to other UHF frequencies. Exhibit S provides evidence with regard to wireless microphone equipment that functions *only* on Channels 52-69.

<sup>26</sup>See Qualcomm, Press Release, “MediaFlo Technologies Power In Vehicle Mobile-TV Demo at NAB 2008,” (April 14, 2008), available at: [http://www.qualcomm.com/press/releases/2008/080414\\_MediaFLO\\_Technologies\\_Powers\\_InVehicle\\_Mobile\\_TV.html](http://www.qualcomm.com/press/releases/2008/080414_MediaFLO_Technologies_Powers_InVehicle_Mobile_TV.html) (last visited July 6, 2008).

More urgently, the intense use of wireless microphones in houses of worship, in theaters, and in other places where commentors in Docket No. 04-186 report the use of hundreds of wireless microphones raises the specter of pools of interference cutting off vital public safety communications systems. Because these venues frequently have thick walls, and because of the potential for new wireless data services on the reclaimed UHF bands to provide medical telemetry or graphic data files such as building plans, and because of the intense demand for additional spectrum frequently noted by the public safety community, PISC anticipates that public safety entities will seek to use these UHF frequencies as soon as they become available. If unauthorized wireless microphone use converts houses of worship, theaters, and other such venues of intense unauthorized use into concentrated pools of UHF interference, it will significantly impede future public safety operations in these venues. Medical first responders rushing to treat a cardiac victim at a Broadway Theater, or fire fighters and police combating a future natural catastrophe or 9/11-style terrorist attack, must be able to rely on their interoperable wireless equipment with absolute confidence. The longer the Commission permits manufacturers to engage in these illegal marketing practices, however, the more contamination of the spectrum and potential for harmful interference to public safety operations the Commission creates – with potentially devastating results. Indeed, given the enormous value placed by the 9/11 Commission on maintaining a 99.999 percent reliable, interoperable wireless network, the Commission cannot afford to continue to follow its policy of “benign neglect.”

**IV. UNAUTHORIZED USERS, AND RETAILERS THAT FACILITATED THE SCHEMES OF MANUFACTURERS IN IGNORANCE, SHOULD NOT FACE COMMISSION ENFORCEMENT ACTIONS.**

As noted above, although Shure and other manufacturers willfully, knowingly and repeatedly violated Section 302(b), 47 USC §302(b), and Commission Rules 2.803 and 2.927, 47 CFR §§2.803,

2.927, the same cannot be said for the thousands of unauthorized users who bought equipment in good faith and now, through no fault of their own, have become “radio pirates” guilty of continued broadcasting on the television bands without a license. Indeed, absent further evidence, it also appears that consumer electronic retailers such as Amazon.com, and even websites dedicated to karaoke and other unauthorized uses on which users can buy Part 74, Subpart H wireless microphones, remained unaware that they were facilitating violation of the Commission’s rules. The evidence PISC has collected all points to Shure and the other manufacturers as the parties responsible for these knowing and repeated violations.

Accordingly, although PISC urges the Commission to act expeditiously against Shure, Nady Systems, VocoPro, Sennheiser Electronic Corporation, Audix Microphones, Audio2000, Electro Voice (a subsidiary of Bosch Communications Systems), Hisonic International, and Pyle Audio, PISC recommends that the Commission refrain from bringing enforcement actions against either retailers or unauthorized users. To the contrary, the Commission should regard the unauthorized users, many of whom spent thousands of dollars on systems they cannot legally use, as victims of the manufacturers and deserving of restitution. Further, as detailed in the attached *Petition for Rulemaking*, the Commission should move expeditiously to create a “General Wireless Microphone Service” and provide legal recognition for the thousands of unwilling “radio pirates” created by the illegal and deceptive marketing schemes of the manufacturers.<sup>27</sup>

## CONCLUSION

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<sup>27</sup>If the Commission finds evidence that retailers were aware of the violation of the Commission’s rules and willingly participated, or that certain unauthorized users were aware of their ineligibility and of the unauthorized nature of their intended use and nevertheless willfully and knowingly purchased the Part 74, Subpart H wireless microphones, the Commission might reconsider such specific cases.

WHEREFORE, the Commission should commence enforcement proceedings against the named manufacturers for willful and knowing violation of Section 302(b), and Commission Rules 2.803 and 2.927.

Respectfully submitted,

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July 16, 2008

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington D.C. 20554**

\_\_\_\_\_ )  
In the Matter of ) RM - \_\_\_\_\_  
 )  
Petition To Create A General Wireless )  
Microphone Service (GWMS) )  
\_\_\_\_\_ )

To: Office of the Secretary, Federal Communications Commission

**PETITION FOR RULEMAKING**

Media Access Project, on behalf of the Public Interest Spectrum Coalition, submits this *Petition for Rulemaking* in accordance with Commission Rule 1.401, 47 CFR §1.401. Because of the widespread nature of the problem at issue, the significant risk to public safety operations, and the danger of harmful interference to that could undermine the introduction of new wireless broadband services in the 700 MHz band, PISC ask for expedited treatment of this *Petition*.

**INTRODUCTION**

As set forth in the attached informal complaint, because of the marketing practices of Shure and other manufacturers of wireless microphones authorized under Part 74, Subpart H, tens of thousands of unauthorized users throughout the country have purchased an untold number of wireless microphones. As demonstrated by comments in Docket No. 04-186, some of these unauthorized users - such as houses of worship, theaters and performance centers, and corporate event sites – use dozens or even hundreds of wireless microphones operating on UHF channels. While use of vacant broadcast channels has not, apparently, caused widespread interference with free over-the-air television reception, the widespread, unauthorized and intense use of wireless microphones does

threaten the new public safety and commercial wireless services permitted to commence operations on UHF Channels 52-69 after the analog broadcast shut-off on February 17, 2009. Because of the risk to these new wireless services from unauthorized wireless microphone use, and because manufacturers have demonstrated an intent to market equipment authorized for limited use to the general public, the Commission must move expeditiously to prohibit the manufacture and sale of wireless microphones that operate on Channels 52-69, even for licensed users. In addition, the Commission should resolve the problem of interference from unauthorized users by (a) creating a new General Wireless Microphone Service (GWMS), licensed by rule under Section 307(e) for use by the general public, (b) limit operation of this service to vacant UHF bands<sup>28</sup> below Channel 52, on a secondary basis to licensed Part 74, Subpart H systems and on a co-equal basis with any white spaces devices authorized in Docket 04-186, (c) authorize GWMS users as primary on the 2020-2025 MHz band, and (d) require the wireless microphone users whose illegal marketing practices created the widespread dissemination of unauthorized equipment to bear the cost of migration by exchanging existing equipment for new equipment compliance with the proposed GWMS service rules.

**I. THE CURRENT SITUATION PLACES NEWS PUBLIC SAFETY SERVICES AND COMMERCIAL SERVICES AT RISK.**

Based on the paucity of interference complaints, it would appear that concerns by broadcasters that allowing productive use of the broadcast “white spaces” by the general public will create interference with free over-the-air television have little basis in reality. Even without sensing technologies or the strict power limits demanded by broadcasters for devices under consideration in

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<sup>28</sup>PISC does not intend that the Commission should authorize the proposed GWMS to operate on channels unavailable to licensed wireless microphone users, such as Channel 37 (reserved by the Commission for wireless medical telemetry). Rather, the Commission should authorize the GWMS to operate on channels considered available for licensed LPAs under 47 CFR §74.802(a).

Docket No. 04-186, the proliferation of unauthorized wireless microphone use does not appear to have created significant interference with free over the air television. The Commission may therefore question the need for urgency.

Aside from the very real issue of the way in which widespread daily violation of the Commission's rules undermines Commission authority, the upcoming analog shut off and the introduction of new services that will operate in an entirely different manner changes the interference calculus. Broadcast television involves a high-power transmission from a tower to receivers. Even where members of the general public use wireless microphones in their own homes, as the advertising by manufacturers urges, the strong broadcast signal will more likely overwhelm the relatively weak wireless microphone signal rather than the wireless microphone interfering with a neighbor's television reception. As a result, the uncontrolled use of low power wireless devices in the broadcast bands has not created significant interference – even where the interference mitigation measures proposed in Docket No. 04-186 are wholly absent.

After the analog shut off, however, the use of UHF channels 52-69 will change from a broadcast model to entirely different architectures and uses. This environment requires more sophisticated devices or greater cooperation among users to avoid mutual interference than does the broadcasting environment. Indeed, for this very reason, the Commission determined it would not consider operation of unlicensed devices on Channels 52-69, even for fixed operations and even with sensing technologies and other means of mitigating the interference risk. It is in *this* environment that the widespread unauthorized use of wireless microphones – devices with no interference mitigation technologies designed for a wholly different spectral environment – threatens to create the real risk of harmful interference. Members of the general public operating unauthorized wireless microphones



at home karaoke parties or during other recreational uses – as marketed aggressively by Shure and others – will create interference with the much weaker signals from consumer handsets and public safety networks designed for cellular architectures and in expectation of “clear” spectrum.

The urgency is further increased by the fact that several manufacturers sell equipment that only operates on UHF channels 52-69. *See* Exhibit S. In other words, unless the Commission takes action, thousands of devices incapable of avoiding these occupied channels will remain scattered throughout the country in the hands of unauthorized users operating in a manner impossible to predict or protect against.

It is important to understand the scope of the problem. The risk goes beyond the possibility of a dropped broadband connection by a Verizon subscriber at an open air concert in the park where performers use dozens of wireless microphones in the mistaken belief of their legality, or corporate subscribers unable to read their email at a conference center because the unauthorized use of wireless microphones creates substantial interference. While these problems are certainly real, and have the potential to undermine consumer confidence and slow adoption of new wireless services, they do not capture the danger to public safety if the Commission fails to act expeditiously.

As reported by unauthorized users in Docket 04-186, certain venues, such as theaters and large houses of worship (so called “megachurches”), use hundreds of wireless microphones intensively while in operation. This creates a veritable cloud of RF interference on the channels of the new commercial and public safety services on UHF Channels 52-69. A team of first responders summoned to treat a heart attack victim at a church running into such a wireless microphone cloud will find that their new radios capable of penetrating walls and providing medical telemetry are now useless. Firefighters and police could potentially find their new interoperative systems fatally

unreliable in a building such as a theater or corporate conference center where such clouds of interference from wireless microphone systems left operating can spring up unexpectedly.

Nor is this problem limited to only a few unauthorized systems, or a few easily detectable locations. While no one knows the exact number of wireless microphones in the hands of unauthorized users, an industry article in 2006 estimated this number at over 400,000 and growing on a daily basis as the devices increase in popularity.<sup>29</sup> Every day the Commission permits sale of wireless microphones operating on Channels 52-69 aggravates the already nearly intractable problem of limiting the spread of these unauthorized wireless microphone to control the interference risk to new public safety and commercial systems.

Given the risk to life and property in permitting widespread interference to public safety systems, and the significant adverse effect of permitting the widespread risk of harmful interference to new commercial services, the Commission can no longer ignore the situation. In addition to acting against the manufacturers in the attached complaint to stem the further proliferation of unauthorized users, the Commission must also take steps to eliminate wireless microphones that operate on Channels 52-69. In addition, the Commission should take the opportunity to remedy the ongoing problem of illegal use by migrating the unauthorized users to an authorized alternative, as described below.

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<sup>29</sup>Paul D. Lehrman, "Can You Hear Me Now? The Wireless Crunch Is Coming," *Mix Magazine*, May 1, 2006, available at: [http://mixonline.com/mag/audio\\_hear\\_2/index.html](http://mixonline.com/mag/audio_hear_2/index.html) (Last visited July 9, 2008).

**II. THE COMMISSION MUST TAKE IMMEDIATE STEPS TO REVISE EXISTING RULES FOR LEGAL OPERATIONS TO LIMIT THE POSSIBILITY OF HARMFUL INTERFERENCE TO NEW SERVICES AFTER THE DIGITAL TRANSITION.**

As a first step, the Commission must amend its rules to minimize the possibility of harmful interference even from licensed users. Under the rules governing the use of wireless microphones and other low power auxiliary stations (LPAS), licensed users may operate systems on the designated frequency bands, secondary only to licensed television broadcasters. *See* 47 CFR §§74.802, 74.803. On a strict reading of the rules as written, manufacturers may continue to make and sell wireless microphones that operate on UHF Channels 52-69 even after the analog shut off, and licensed systems may continue to operate on these channels. Indeed, given Commission precedent favoring senior licensed users over new entrants, licensed wireless microphone operators using their systems for authorized purposes may have superior rights to the spectrum than public safety licensees or winners of the 700 MHz auction for commercial licenses. Unless the Commission moves swiftly to modify its rules, licensed wireless microphone users can require public safety or commercial licensees that interfere with licensed wireless microphone systems to cease operation, rather than the other way around.

Clearly, the Commission should, as a first step to resolving the problem of wireless microphones and the digital transition, amend the rules governing licensed systems and the manufacture and sale of LPAS to eligible users for authorized uses. Specifically, the Commission should either prohibit licensed users from operating on Channels 52-69 after February 17, 2009, or at least clarify that they will have secondary status to the new public safety and commercial systems. Because the Communications Act grants the Commission broad authority to modify license terms and operation of licensed systems, particularly to avoid the risk of harmful interference, *see* 47 USC

§§ 303(f), 304, 316, the Commission has authority following a duly noticed rulemaking either to migrate existing Part 74, Subpart H licensees off UHF Channels 52-69, or to relegate them to secondary status.

Even if the Commission permits further operation of LPAS on Channels 52-69 on a secondary basis, the Commission should prohibit the further manufacture, marketing and sale of wireless microphones and other LPAS that operate on Channels 52-69. As the current widespread unauthorized use of wireless microphones makes clear, manufacturers and retailers either cannot or will not control the sale of these devices to the general public. The longer the Commission continues to permit manufacture of devices that operate on Channels 52-69, therefore, the worse the problem of interference from unauthorized users grows.

Ideally, therefore, the Commission should order the manufacture, marketing and sale of LPAS that operate on UHF Channels 52-69 immediately as an emergency measure to prevent further aggravation of the interference issues created by unauthorized use. At the least, the Commission should require that manufacture, marketing, and sale of LPAS operating on Channels 52-69 cease on or before February 16, 2009, so that sales of these devices will not continue after the analog shut off.

**III. THE COMMISSION SHOULD AUTHORIZE A NEW “GENERAL WIRELESS MICROPHONE SERVICE” WITHOUT REQUIRING INDIVIDUAL LICENSES, PURSUANT TO ITS AUTHORITY UNDER SECTION 307(e), AND REQUIRE THE MANUFACTURERS TO REPLACE EQUIPMENT OPERATING ON UHF CHANNELS 52-69.**

The steps described in Part II address possible interference by licensed users and steps to prevent aggravating the already existing problem of interference with new public safety and commercial wireless services. But the Commission must go further, and address the underlying danger from widespread unauthorized use. Unless the Commission acts, and acts quickly, the new

public safety and commercial wireless services – the “digital dividend” from the analog shut off and conversion to digital television – will emerge in an environment in which the constant risk of harmful interference will place life and property at risk, undermine billions of dollars in investment, and deny consumers the long awaited benefits of the digital transition.

At first, the problem would appear insoluble. As an initial matter, strong considerations of equity make any effort to prosecute unauthorized users as “radio pirates” contrary to the public interest. The vast majority of unauthorized users had no reasonable way of knowing that they needed an FCC license to purchase the equipment, or that FCC rules made them ineligible for licenses and prohibited the uses for which they wanted to purchase the equipment in the first place. Indeed, because of the deceptive marketing practices by manufacturers described in the attached complaint, a marketing campaign that included deceptive use of FCC certifications and misleading descriptions of Commission rules and restrictions, the vast majority of unauthorized users had every reason to believe that their purchase and subsequent use of wireless microphones complied with the law.

Furthermore, years of unauthorized use have demonstrated clearly that even unsupervised, widespread, and often intense use of wireless devices in the vacant broadcast bands *does not* interfere with television broadcast service. By contrast, opening these broadcast “white spaces” to general use *has* had enormous benefits. Indeed, Docket No. 04-186 is replete with testimonials from unauthorized users on how use wireless microphones has improved activities from amateur theatricals to worship services. Attempts to prosecute these unauthorized users and confiscate equipment would be both unjust and violate the public interest.

In any event, even without these considerations, any effort to rely on prosecution of unauthorized users would prove futile. It would take an army of FCC inspectors to locate and seize

equipment distributed among hundreds of thousands of users across the country. Although the Commission could alleviate the most dangerous pockets of interference by using the record of 04-186 to find the most intense unauthorized uses of wireless microphones in performance venues such as Broadway or the Grande Ole Opry, such actions would do little to alleviate the overall danger of harmful interference.

To address the problem, the Commission must first create a new home for unauthorized users, one that allows them to enjoy the benefits of wireless microphones and other wireless equipment in the broadcast white spaces without interfering with licensed services of any kind. Next, the Commission must provide a path to migration, one that minimizes the expense to unauthorized users (themselves victims of the manufacturers illegal marketing tactics) and prevents the manufacturers whose deceptive marketing created the current situation from enjoying an unjust enrichment by selling new, compliant equipment to newly authorized users.

Fortunately, the Communications Act provides the Commission with the tools it needs to resolve the situation. The Commission can create a new service open to the general public under Section 307(e), which allows the Commission to authorize a service without need for individual licenses. Congress created Section 307(e) to address a similar situation that arose 25 years ago in the context of the proliferation of citizens band (CB) radio. Further, under the Commission's general power to regulate the marketing and sale of wireless equipment, its authority to order seizure and forfeiture of equipment marketed or sold in violation of the Commission's rules, and its broad powers under Section 4(i), the Commission can and should require manufacturers to replace – at their own expense - old equipment with new equipment that conforms to the rules the Commission adopts for the proposed General Wireless Microphone Service (GWMS). See *Teledesic LLC v. FCC*, 275 F.3d

75 (D.C. Cir. 2001) (broad power to order compensation for migration of wireless services); *Mobile Communications Corp. Of America v. FCC*, 77 F.3d 1399, 1403-07 (D.C. Cir. 1996) (broad power under Section 4(i) to order payments). Finally, to assure that the GWMS has sufficient spectrum, and to resolve concerns over protection of wireless microphones from possible interference from unlicensed devices under consideration in Docket No. 04-186, PISC recommend that the Commission designate the 202-2025 MHz band for GWMS on a primary basis.

**A. The Commission Should Create An Authorized GWMS Under Section 307(e).**

Section 307(e)(1) states, in pertinent part:

Notwithstanding any license requirement established in this chapter, if the Commission determines that such authorization serves the public interest, convenience, and necessity, the Commission may by rule authorize the operation of radio stations without individual licenses in the following radio services: (A) the citizens band radio service . . .

47 USC §307(e)(1). Section 307(e)(3) states that “citizens band radio” and other services eligible for authorization by rule “shall have the meanings given them by the Commission by rule.” Since creation of Section 307(e) as part of the Communications Act Amendments of 1982, Pub. L. 97-259 (“1982 Act”), the FCC has used this authority to create useful voice services for the general public without requiring the need to obtain individual licenses. *See, e.g., In re Amendment of Part 95 to Establish a Very Short Distance Two-Way Voice Radio Service*, 11 FCCRcd 12977 (1996) (creating Family Radio Service).

Congress created 307(e) in 1982 to address circumstances similar to those at issue here. Prior to passage of the 1982 Act, all wireless services not authorized as “unlicensed” under Part 15 required individual licenses. The Commission attempted to enforce an individual licensing requirement under Section 301, but found it impossible to enforce compliance. As reported in the

1982 Conference Report, “of the estimated twenty million operators in the CB service, some eight million are estimated to be operating without a license. This situation could create a regulatory nightmare for the commission if serious attempts were made to remedy this situation.” H.R. Conf. Rep. 97-765 at 36. The Conference report also observed that because the licensees did not receive exclusive spectrum rights, individual licenses served no purpose. *Id.* Nevertheless, because of the potential for harmful interference in the absence of ongoing Commission authority, Congress deemed it essential to maintain a general licensing requirement, *Id.* now referred to as “licensing by rule.”

Just as Congress in 1982 wisely chose to legitimate the widespread use of CB radios rather than require the Commission to choose between an impossible job of enforcement or condoning widespread violations, the Commission should use this same authority to provide a “pathway to authorization” for the thousands of innocent “radio pirates” using wireless microphones illegally. Indeed, because the vast majority of unauthorized users genuinely believed they had every right to buy and use the wireless microphones, they have an even greater claim to relief than the 12 million CB “radio pirates” Congress granted amnesty to in 1982 – who simply could not be troubled to fill out the application on the back of the box and mail it back to the FCC.

The Commission need not develop new service rules for the proposed GWMS, other than prohibiting operation on Channels 52-69.<sup>30</sup> As the lengthy period of unauthorized widespread use makes clear, the general public can continue to operate wireless microphones on vacant UHF channels below Channel 52 while coexisting with other FCC authorized services. PISC proposes that the GWMS remain secondary to broadcast services, and would be authorized as secondary to

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<sup>30</sup>Even if the Commission allows secondary use of Channels 52-69 by licensed LPAS users, it should not allow operation on these channels by GWMS users.



individually licensed LPAS systems. This both preserves the relative primary status of individually licensed users and recognizes that the original intent of the wireless microphone service was and remains as a necessary auxiliary service to broadcast, cable and motion picture production.

Although the Commission can resolve the problem of wireless microphones without considering the status of GWMS as against the proposed white spaces devices under consideration in Docket No. 04-186, PISC proposes that – unlike individually-licensed wireless microphone systems by authorized licensees – GWMS would have co-equal rights with any authorized white spaces devices and would not be eligible for “beacons” under consideration for licensed users. Rather, GWMS users and white space devices users would resolve interference issues through mutual negotiation. PISC observe that this represents a considerable improvement for unauthorized wireless microphone users, as they at present do not enjoy *any* rights as against interference from devices authorized by the Commission – a fact some unauthorized users have reluctantly acknowledged. *See Ex Parte* Comments of the Broadway League, Docket No. 04-186, at 2 (filed June 10, 2008). To the contrary, in the absence of any Commission action, operators of authorized white spaces devices would have the right to require unauthorized users of wireless microphones to cease their illegal operations.

Making GWMS users and WSD users coequal therefore provides adequate protection for GWMS users while preserving the vital principle that illegal operation of devices by ineligible users *cannot* create seniority as against devices properly authorized by the Commission. Any other result would reward rule breaking with seniority as against authorized devices – a result not merely absurd, but inimical to the Commission’s responsibility to cultivate respect for its rules. And, in any event, sensing and other interference mitigation technologies will provide adequate protection for GWMS

users, particularly intense users such as theaters and houses of worship, without the need for beacons.

**B. Use of the 2020-2025 MHz Band.**

A confluence of circumstances may provide additional spectrum for the GWMS, and additional protection for GWMS users concerned about possible interference from white space device users. The Commission has under consideration a proposal to reallocate spectrum between the AWS-2 and AWS-3 bands to facilitate creation of a new wireless broadband service in the AWS-3 band. *In re Service Rules for Advanced Wireless Services in 2155-2175 MHz*, 23 FCCRcdc 9295 (2008). Under this plan, the 2020-2025 MHz band, currently paired for auction with the 2175-2180 MHz band in AWS-2, would become an unpaired band unsuitable for auction.

The Commission could allocate the 2020-2025 MHz band to the GWMS on a primary basis. This would provide GWMS with an additional channel outside the vacant UHF bands. Not only would this increase the number of channels available to wireless microphones, it would provide a channel free of authorized white space devices. To the extent GWMS users do not trust sensing and remain concerned over the risk of harmful interference from authorized white spaces devices, the use of the 2020-2025 MHz channel will provide these users with greater security.

PISC stresses that resolution of this *Petition for Rulemaking* does not depend on the outcome of the *AWS-2/AWS-3 Proceeding*. Rather, PISC simply observes that if the Commission does adopt the proposed rules in the *AWS-2/AWS-3 Proceeding*, the Commission may profitably allocate the remaining 5 MHz channel that might otherwise lie fallow to the proposed GWMS.

**C. Manufacturers Should Replace Old Equipment With New Equipment.**

To successfully remove the danger of harmful interference, the Commission must require the return of all equipment sold to ineligible users for that operates on Channels 52-69. This would

require these unauthorized users, the vast majority of whom purchased these expensive systems in good faith, to suffer thousands of dollars in losses. Worse, this solution would confer an unjust enrichment on the very manufacturers whose willful and knowing violation of Commission rules created this unfortunate set of circumstances. Such a result would fly in the face of the public interest, and would potentially violate the Commission's long-standing rule against unjust enrichments from use of the public airwaves.

Further, because of the vast size of the unauthorized license pool and the amounts of equipment that must be returned, the Commission must rely in the first instance on voluntary cooperation from unauthorized users. Solutions that require unauthorized users to incur thousands of dollars in costs are unlikely to prove effective – especially where unauthorized users will justifiably feel that they are being punished for being victims of the manufacturer's illegal and deceptive marketing practices.

Fortunately, the Commission has broad authority to require the wireless manufacturers responsible for the situation to bear the cost of migrating unauthorized users to the GWMS. Under Sections 4(i), 501, 502, 503 and 510 of the Communications Act, the Commission has broad power to punish the illegal marketing or sale of wireless equipment in violation of Section 302(b). Rather than face fines of up to \$11,000 per day per offense – with each piece of illegal advertising subject to an additional fine – the Commission can offer wireless microphone manufacturers a settlement under which wireless manufacturers agree to exchange old equipment for equipment that does not operate on UHF Channels 52-69. The Commission may also require these manufacturers to widely advertise the availability of the exchange program in venues designed to reach unauthorized users, as well as requiring the manufacturers to contact all unauthorized users for which they have contact

information. While unlikely to induce all unauthorized users to return all wireless equipment capable of interfering with public safety and commercial wireless systems operating on Channels 52-69, the opportunity to replace old equipment with new equipment – especially when accompanied by warnings about compliance with new FCC rules – seems reasonably calculated to secure wide cooperation.

In addition to any settlement in resolution of the complaint, the Commission has broad authority to order regulated entities such as wireless microphone manufacturers to bear the cost of interference mitigation and the cost of migrating users to the new GWMS service. *See, e.g., Mobile Communications Corporation of America*, 77 F.3d 1399, 1404-06 (D.C. Cir., 1996) (referring to Section 4(i) as the Commission’s “necessary and proper” clause and finding authority to order pioneer license recipient to pay for migration of incumbent users as part of “broad power” to regulate spectrum). The Commission has used this authority to require equipment manufacturers to pay for the migration incumbents where necessary. *See Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, 8 FCCRcd 6589 (1993) (Manufacturers of unlicensed PCS equipment to pay to migrate incumbents). There is no reason the Commission cannot require the existing wireless microphone manufacturers, whose conduct created a class of unauthorized users, to migrate these users to new equipment using the “necessary and proper clause” authority of Section 4(i).

To conclude, if the Commission follows the road map set out by PISC in this *Petition*, the Commission can simultaneously resolve very real concerns about interference with public safety and new commercial wireless services; permit houses of worship, theater groups and other unintentional “radio pirates” to continue to use wireless microphones in the broadcast white spaces – but in a legal

manner; smooth the pathway to authorization for additional productive use of the broadcast white spaces in Docket No. 04-186, find a productive use for the “fallow” 5 MHz channel left over from resolution of the AWS-2/AWS-3 auctions; and require that those manufacturers that engaged in marketing of wireless microphones to the general public bear the costs associated with correcting the situation they created. It is difficult to imagine a result that could more neatly serve the public interest. The Commission should therefore grant the PISC *Petition*.

#### **IV. INTEREST OF PISC MEMBERS**

Finally, although any member of the public can file either a *Petition for Rulemaking* or an *Informal Complaint*, PISC notes that its members have significant interest in securing speedy resolution of both the complaint and the *Petition for Rulemaking*.

First and foremost, as members of the public, members of PISC organizations have the right to use wireless services on a non-interfering basis. All Commission decisions pertaining to the grant of wireless licenses under Title III have as their ultimate justification that they serve “the public interest, convenience and necessity.” 47 USC §§307(a), 310(d). Even if licensees preferred to ignore the risk of interference, users such as the members of PISC still have every right to demand that the Commission address the very real risks of harmful interference described above.

Further, members of PISC have also suffered from the deceptive practices of manufacturers, and would benefit from the availability of legal wireless microphones. Many members of PISC appear as speakers at corporate events, and find themselves forced to follow a “don’t ask, don’t tell” policy with regard to the sound system rather than knowingly violate FCC rules. Some members of PISC organizations, such as the member organizations of EDUCAUSE and Consumer Federation of America, have purchased wireless microphones in the good faith belief that they had every right to

do so. PISC has a responsibility to find a solution for these victims of the manufacturers' illegal marketing practices.

Finally, PISC members CUWIN Foundation and the Open Source Wireless Coalition (OSWC) have a financial interest in ensuring that wireless microphones operating on UHF Channels do not interfere with the operation of C Block licenses in the 700 MHz band. OSWC represents organizations that make open source applications and equipment for wireless networks. CUWIN Foundation, a member of OSWC as well as PISC, makes open source wireless networking applications and provides information on how to create and maintain open source wireless networking hardware. OSWC members, including CUWIN, hope to develop open source applications and hardware under the "any device/any application" rules applicable to C Block licenses. The potential for harmful interference on these frequencies has an obvious and detrimental impact on their ability to create such applications and successfully market them, which also detracts from their ability to attract funding for these development projects.

For all these reasons, the members of PISC have significant interest in seeing the Commission resolve the current state of affairs with wireless microphones as quickly as possible, and in the manner set forth by PISC in the complaint and *Petition for Rulemaking*.

## CONCLUSION

WHEREFORE, the Commission should initiate an investigation into the conduct of the manufacturers listed in the complaint, and grant the *Petition for Rulemaking*.

Respectfully submitted,

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