

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

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

COMMENTS OF SHURE INCORPORATED

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SUMMARY

Shure commends the Commission for addressing the use of 700 MHz spectrum following the digital television transition. For decades, this spectrum has supported important secondary broadcast auxiliary uses that continue to deliver many socially, culturally, and economically important public interest benefits in the United States. While Shure agrees that it is necessary to update the Commission's rules in advance of the DTV transition to reflect the new uses of the 700 MHz band, such rule changes should be carefully crafted to avoid undue burden or harm to the wireless microphone community, including manufacturers, users, and the American public that are the ultimate beneficiaries and consumers of this audio technology.

Shure does not oppose the eventual transition of secondary wireless microphone operations out of the 700 MHz band given the new primary allocations or the Commission's decision to cease granting new user licenses or equipment authorizations for new 700 MHz LPAS operations and equipment. However, except as applied to the Part 90 Safety Bands already available for public safety operations, Shure opposes the Commission's tentative conclusion that a transition should be mandated to occur for users as of February 17, 2009, a date just a few months away. Even though Shure no longer manufactures 700 MHz equipment for use in the United States, significant 700 MHz use and equipment exists and a transition will be complex, costly and disruptive. Wireless microphone users will face difficult financial, technical and logistical issues and it is not reasonable to expect these users to "turn on a dime" and cease 700 MHz operations virtually overnight. Alternative spectrum is scarce because the spectrum available under the Commission's rules is, in reality, occupied by primary users, unsuitable for wireless microphone operations (including the 2020-2025 MHz band proposed by PISC), or subject to significant uncertainty, including uncertainty arising from the proposals to introduce new interfering uses into the core TV bands, the primary alternative home for transitioning users. These practical considerations make a "flashcut" transition nearly impossible to manage successfully. Accordingly, Shure recommends that users operating in 700 MHz spectrum, other than the Part 90 Safety Bands, be given a 24-month transition period to accommodate the technical, financial and logistical challenge of

moving to operations that use other frequencies. The flashcut rule proposed in the NPRM is unreasonable and, if adopted, will cause undue disruption and confusion, lead to unnecessary and significant expenditures by microphone users, and will not, in the end, be an effective mechanism to achieve the Commission's goal in this proceeding, which is to clear the 700 MHz band of secondary uses.

In addition, any prohibition adopted in this proceeding must not apply to the manufacture and related activities in the United States aimed at the export of 700 MHz equipment. Many other countries allow wireless microphones to operate in the 700 MHz band. Such a rule would be contrary to the public interest in strengthening the competitive position of U.S. companies striving to succeed in foreign markets, would directly undermine U.S. employment, and compel one of the few remaining U.S.-based technology manufacturing industries to move overseas, eliminating valuable U.S. technology jobs and increasing the trade imbalance with other countries.

Finally, PISC's allegations that wireless microphone manufacturers have violated Commission rules are erroneous and should be dismissed. Shure objects to PISC's attempts to discredit the wireless microphone community with misinformation, unfounded arguments and insinuations that distract the Commission from the real issues to be addressed in this and other proceedings. PISC is wrong when it argues that equipment manufacturers should now be charged with unprecedented responsibility for compliance with licensing and service requirements well beyond the requirements to ensure that their equipment meets the Commission's technical standards and has been approved under the Commission's equipment authorization program. None of the statutory or rule provisions referred to by PISC supports this novel and ill-advised view. PISC is also wrong in assuming that license eligibility is a matter defined by the nature of the party (as opposed to the use of the operations) and that manufacturers are able to predetermine eligibility.

Shure agrees that the Commission's rules with respect to wireless microphones, now over 30 years old, should be updated and clarified to eliminate unnecessary and burdensome regulation and better match the intervening development of this important

technology. However, Shure opposes PISC's request to force all wireless microphone operations seeking protection from interference into a newly designated band (2020-2025 MHz) and allow all wireless microphones, other than existing Part 74 licensees, to be licensed by rule but subject to interference as if operating equipment on par with Part 15 equipment in the core TV bands. PISC's proposal is completely unsupported and would impose severe hardship on wireless microphone users (such as broadcasters, sports leagues, theaters, entertainment venues, to name a few), manufacturers and the American public, who all rely on this audio technology.

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COMMENTS OF SHURE INCORPORATED

Shure Incorporated (“Shure”), by its undersigned counsel, hereby respectfully submits these Comments in response to the Notice of Proposed Rulemaking (“NPRM”) released August 22, 2008, in the above-captioned matter regarding various issues relating to low power auxiliary stations (“LPAS”), including wireless microphones, operating in the 698-806 (“700”) MHz band. Shure is a respected U.S. manufacturer of high-quality, professional wireless audio products operating in the United States as low power auxiliary stations under Part 74 of the Commission’s Rules. Shure’s professional advanced wireless audio technology is known worldwide for its unparalleled excellence in wireless audio design and performance. Shure holds grants of equipment authorizations from the Commission for these products and has participated in other Commission proceedings involving technical regulation and policies affecting wireless microphones.

Shure commends the Commission for proposing in this proceeding to address the use of 700 MHz spectrum following the digital television transition. For decades, this spectrum has supported important secondary broadcast auxiliary uses that continue to deliver many public benefits, and it is important to the future use of proposed public

safety and commercial auction winners. While Shure agrees that it is necessary to update the Commission's rules in advance of the DTV transition to reflect the new uses of the 700 MHz band, such rule changes should be carefully crafted to avoid undue burden or harm to the wireless microphone community, including manufacturers, users, and the American public that are the ultimate beneficiaries and consumers of this audio technology. In particular, Shure recommends that the Commission adopt a significantly longer transition timeframe than the few months proposed in the NPRM for LPAS users in the 700 MHz spectrum (other than users operating in the 763-775 MHz and 793-805 sub-bands ("Part 90 Safety Bands") assigned to operational public safety networks). Shure specifically recommends that users operating in 700 MHz spectrum, other than the Part 90 Safety Bands, be given a 24-month transition period to accommodate the technical, financial, and logistical challenge of moving to operations that use other frequencies. In addition, given that many other countries require wireless microphones to operate in the 700 MHz band, any prohibition adopted in this proceeding must not apply to the manufacture and related activities in the United States aimed at the export of 700 MHz equipment.

I. The Commission's 700 MHz Policies Should be Updated, But Not in a Way That Unduly Burdens or Penalizes Wireless Microphone Users, Manufacturers, or the American Public

Shure does not oppose the eventual transition of secondary wireless microphone operations out of the 700 MHz band given the new primary allocations. Shure does not oppose the Commission's decision to cease granting new user licenses or equipment authorizations for new 700 MHz LPAS operations and equipment. However, except as applied to the Part 90 Safety Bands already available for public safety operations, Shure opposes the Commission's tentative conclusion that a transition should be mandated to occur for users as of February 17, 2009, a date just a few months away.¹ Low power

¹ See Revision to Rules Authorizing the Operation of Low Power Auxiliary Stations in the 698-806 MHz Band, WT Docket No. 08-166, Public Interest Spectrum Coalition, Petition for Rulemaking Regarding Low Power Auxiliary Stations, Including Wireless Microphones, and the

auxiliary wireless microphones were introduced under rules first promulgated in 1977.² For more than three decades, wireless microphones have been meeting increasing public demand for high-quality wireless audio services in a variety of sectors. Today, wireless microphones provide critical support for many important activities: broadcasting, news, TV, movie-making, sports, music, religious, and other activities that are a part of everyday American life.³ These activities are socially, culturally, and economically important to the public interest in the United States.

II. The Proposed Transition Will Affect Significant Secondary Wireless Microphone Operations in the 700 MHz Band

The current FCC rules do not prohibit wireless microphones in the 700 MHz band.⁴ The FCC expressly declined to change its rules regarding microphones when it

Digital Television Transition, WT Docket No. 08-167, *Notice of Proposed Rulemaking and Order*, FCC 08-188 at ¶ 2 (Aug. 21, 2008) (“*NPRM*”).

² See Amendment of Part 2, and Subpart D, Part 74, of the Commission’s Rules and Regulations, with Respect to the Use of Wireless Microphones, Docket No. 20195, *Report, Memorandum Opinion and Order*, 63 FCC 2d 535 (Mar. 8, 1977) (“*VHF Wireless Microphone Order*”).

³ See, e.g., Comments of MLB, NASCAR, NBA, NCAA, NFL, NHL, The PGA Tour and ESPN as members of the SPORTS TECHNOLOGY ALLIANCE, ET Docket No. 04-186 at 1 (filed Jun. 27, 2007) (sports programming enjoyed by hundreds of millions of Americans “relies extensively on wireless microphones and related audio equipment in its production and distribution”); Comments of The Grande Ole Opry and Microphone Interests Coalition, ET Docket No. 04-186 at 2 (filed Feb. 1, 2007) (wireless microphones are “integral” to the production of events at the Grand Ole Opry, the Grammy Awards, the Academy Awards, American Idol and the Super Bowl); Comments of the Broadway League, ET Docket No. 04-186 at 3 (filed Jun. 10, 2008) (wireless microphones are “essential to providing audiences with the quality audio and visual experience they now expect from a Broadway show”).

⁴ All claims and arguments that rest on the proposition that wireless microphones have been operating illegally in the 700 MHz or the sale of 700 MHz equipment is illegal are without merit and should be completely disregarded. See Complaint of Public Interest Spectrum Coalition (PISC) Against Shure, Inc., Nady Systems, Inc., VocoPro, Audio2000, Sennheiser Electronic Corporation, Audix Microphones, Electro Voice, Hisonic International, Inc., Pyle Audio, *et al.*; Petition To Create a General Wireless Microphone Service (GWMS), *Informal Complaint and Petition for Rulemaking at iv* (filed Jul. 16, 2008) (“*PISC Petition*”). A prohibition has neither been in place since the DTV rules were established nor scheduled to take effect after the transition.

created the DTV rules nearly a decade ago.⁵ While the NPRM points to FCC statements evidencing the Commission's earlier intent to prohibit secondary wireless microphone operations in the 700 MHz band,⁶ the Commission has not amended its rules and did not come forth with a regulatory proposal until it released the instant NPRM and Order in late August, 2008.

Despite the lack of an FCC mandate or clarity regarding continued secondary operations in the 700 MHz band, Shure elected years ago to start the process of transitioning its wireless microphone products and customers out of the 700 MHz band. Shure decided that even if wireless microphones were to retain their secondary status in the 700 MHz band, it would better serve its customers to move its product lines away from spectrum that has been allocated and licensed to primary users other than broadcasters. That process was largely completed in 2007 when Shure discontinued the manufacture of the very last of its 700 MHz wireless microphones for sale in the United States. The company made this decision based on its own assessment of the business and product development considerations relevant to Shure. This decision was not mandated by Commission rules or motivated by any instances of reported interference to or from primary users developing their services. Indeed, neither the NPRM nor the Petitions cited by the Commission seeking a rule clearing the 700 MHz band⁷ describe any instance of actual interference.

Even though Shure elected to shift its product line out of the 700 MHz band, the forward-looking private decision of only one manufacturer should not be misconstrued to mean that a transition of 700 MHz use and equipment is near complete, or anything less than complex, costly and disruptive. Shure cannot represent what approaches other wireless microphone manufacturers and users have taken with respect to 700 MHz

⁵ See *Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service*, Docket No. 87-268, *Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order*, 13 FCC Rcd 7418 at ¶176 (Feb. 23, 1998).

⁶ See *NPRM* at ¶¶ 14, 15 (stating the Commission “contemplated that low power broadcast auxiliary devices would lose their secondary status and would need to vacate the band”).

⁷ See *PISC Petition* at *viii*; see also Letter from Ralph Haller, Chair, National Public Safety Telecommunications Council, to The Honorable Kevin Martin, Chairman, FCC (filed Jun. 30, 2008).

equipment, but the Commission should assume that there exists a significant embedded base of 700 MHz wireless microphone equipment currently in use.

There are many users that have continued to deploy 700 MHz equipment under the Commission's rules.⁸ The FCC has continued to actively support wireless microphones in the 700 MHz band as evidenced by the ongoing grants of equipment authorization for new products. Since the promulgation of the DTV rules in 1998, the Commission has issued 377 new equipment certifications for equipment operating in the 700 MHz band under Part 74, of which more than 100 are wireless microphones.⁹ These new 700 MHz equipment authorizations reflect that demand has continued to grow and 700 MHz LPAS operations have continued to be maintained and indeed have *expanded*. As recently as August 2008, the FCC granted equipment authorizations for microphones in the 700 MHz band. This activity ended only with the recent release of the NPRM and Order in this proceeding in which the FCC announced it would no longer grant new user licenses or equipment authorizations for LPAS operations in the 700 MHz band. Further, it is also relevant that users of the high grade, professional wireless microphone equipment that comprises the core of the 700 MHz wireless microphone market may typically expect a useful system life of 8-10 years.

III. Successful Clearing of Secondary LPAS from the 700 MHz Band Requires A Longer Transition Period of 24 Months for Operations Outside the Part 90 Public Safety Bands

Given the presence of significant embedded 700 MHz LPAS use, a realistic time frame is needed for users and the manufacturing community to “migrate” wireless

⁸ The Commission's rules provide flexibility for Part 74 licensees to make “desirable and necessary changes in equipment including replacement” without prior FCC authorization. 47 C.F.R. § 74.852. Further, Part 73 station licensees are permitted to operate LPAS, including wireless microphones, without separate prior FCC authorization so long as operations on any one frequency do not exceed 720 hours. 47 C.F.R. § 74.24.

⁹ Subsequent to the Digital Television Transition and Public Safety Act of 2005 (*see* Title III of the Deficit Reduction Act of 2005, Public Law 109-171, Feb. 8, 2006), setting the current DTV transition date, the Commission issued 146 equipment certifications for Part 74 transmitters in the 700 MHz band, of which approximately 35-50 are new 700 MHz wireless microphone products.

microphone operations to other spectrum locations. Shure specifically proposes that users, other than those operating in the Part 90 Safety Bands, be given 24 months from the effective date of the rules in order to “transition” to wireless microphone operations using other spectrum.¹⁰

The NPRM proposes a “flashcut” transition by simply prohibiting all “operation of low power auxiliary stations in the 700 MHz band,”¹¹ as well as prohibiting “the manufacture, import, sale, offer for sale or shipment of [700 MHz LPAS] devices,”¹² by February 17, 2009, the DTV transition date. The Commission seeks comment on its tentative conclusion that the proposed flashcut prohibition is justified by the Commission’s concern that “continued use of this spectrum by existing [700 MHz LPAS] licensees . . . may be disruptive to new public safety and other wireless operations in the 700 MHz band, and because of the ready availability of other means that those licensees have under our rules for obtaining access to various other spectrum frequencies in which to operate low power auxiliary stations.”¹³ The NPRM also states that “. . . such stations will continue to be permitted access to more than 300 megahertz of spectrum in which low power auxiliary stations may operate under our rules . . . [and] given the amount of spectrum available in these other bands, prohibiting the use of low power auxiliary stations from the 700 MHz band will have minimal impact on such operations.”¹⁴

Shure believes there are three fundamental flawed assumptions in the NPRM language offered as a justification for a flashcut transition:

- 1) Minimal impact on LPAS operation will result;
- 2) Wireless microphone users have access to more than 300 MHz of other spectrum; and

¹⁰ Even though the NPRM or petitions that incited the NPRM do not contain any evidence or technical analysis assessing the risk of interference from LPAS operators to public safety, Shure is not objecting to the proposed immediate ban on operations in the Part 90 public safety bands.

¹¹ *NPRM* at ¶ 13.

¹² *Id.* at ¶ 17.

¹³ *Id.* at ¶ 16.

¹⁴ *Id.* at ¶ 18.

- 3) Disruption to new public safety and other wireless operations will occur as of February 17, 2009.

The NPRM proposes a date less than 4 months away from the *reply comment* date in the proceeding. This period of time is grossly inadequate for 700 MHz users and manufacturers to transition use and equipment to other spectrum. Part 74 secondary operations in the 700 MHz band have been in existence for more than 30 years and it is not reasonable to expect users to “turn on a dime” and cease 700 MHz operations. In other cases the Commission has allowed transition periods between 3-10 years recognizing that the prospect of moving incumbent operations and changing equipment poses a difficult burden on users and manufacturers.¹⁵

A. Transitioning Users Out of the 700 MHz Band On An Accelerated Basis Entails A Challenging Technical, Financial and Logistical Process

To the users and installers of professional audio systems, transitioning major portions of an installed base can be an onerous technical, financial, and logistical undertaking. A significantly longer transition timeframe is critical to address a range of practical issues including:

- Consultation
- Funding
- Equipment selection, sourcing, and purchase
- System configuration
- Installation
- Frequency coordination and testing
- Training
- Fine tuning and maintenance

¹⁵ See, e.g., Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Station in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use, IB Docket No. 98-172, *Report and Order*, 15 FCC Rcd 13430 (Jun. 22, 2000) (granting fixed microwave operations co-primary status with Ka-band satellite transmissions for a ten year period); Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, ET Docket No. 92-9, *Third Report and Order and Memorandum Opinion and Order*, 8 FCC Rcd 6589 at ¶ 13 (Aug. 13, 1993) (noting that it was “essential that the [transition] process not disrupt the communications services” provided by incumbents, Commission allowed fixed microwave operators a minimum of three years to vacate bands in the 2 GHz range subsequent to notification that new licensee had initiated voluntary negotiations to clear incumbent from band).

“Transitioning” out of the 700 MHz band entails far more than simply turning a dial to retune an audio system to another frequency,¹⁶ or even throwing away or otherwise switching out one wireless microphone for another. In changing frequencies, all elements of a wireless audio system are affected. Transmitters, including any associated microphones, receivers, antennas, line amplifiers, filters (in some cases), and antenna distributors are all frequency specific and must all be changed.

From a user perspective, the gating issue for a successful transition is the question of funding. Replacing dozens or hundreds of wireless audio channels with new gear can mean an average expenditure of \$50,000 to \$250,000 or more. Shure is aware of large users who stand to incur expenses of several million dollars in order to replace 700 MHz equipment. For many users, it would be an extreme hardship to impose a requirement that would necessitate significant unplanned -- and most likely unbudgeted -- expenditures in the very short time frame proposed by the Commission.

Users will also be faced with the significant task of researching, selecting, and ordering equipment that will meet their new requirements as dictated by the proposed mandatory clearing of the 700 MHz band. This process ordinarily takes several months, given the magnitude of the investment for professional installation and expectations that the chosen audio system will meet critical needs for many years.

Once new systems are delivered, users must frequency coordinate and test them internally and with other users. This would be the case for most electronic news gathering (ENG) and broadcast network production operations in any major city, as well as other operations like major theater districts, some of which reportedly have approximately 2,000 systems operating within the confines of reasonably small city sectors. Personnel also have to be trained in the operation of the new equipment and software.

Finally, the entire 700 MHz transition process is currently subject to the very real complication that the principal alternative spectrum for transitioning wireless microphone

¹⁶ Wireless audio systems typically do not have more than a 60 MHz tuning range.

operations -- the core TV bands -- is currently subject to various uncertainties with respect to secondary wireless microphone operations. In the Commission's "white spaces" proceeding, ET Docket No. 04-186, several proposals have been made to introduce new uses into the unassigned TV channels where Part 74 allows wireless microphones to operate secondary to television. Shure and other wireless microphone interests have analyzed the various proposals and identified the lack of meaningful protections for wireless microphones from interference caused by new white space devices.¹⁷ The lack of a clear spectrum home that can accommodate transitioning 700 MHz users significantly hinders their ability to make large replacement investments with confidence. Given the high visibility of potential future challenges with operation of wireless microphones in the core TV bands, wireless microphone users and manufacturers are reluctant to engage in substitution of 700 MHz systems with those operating below 698 MHz, due to concerns of reductions in performance caused by interference from new devices. Users currently operating in the 700 MHz band ask whether wireless microphones will be able to operate in the core TV band in the future, whether there will be any viable spectrum free from interference and if so, where, and in what quantity that spectrum will be. Until a decision is announced in ET Docket No. 04-186, even those users who fully understand that they should vacate the 700 MHz band

¹⁷ In an effort to bring greater certainty to future wireless microphone use, Shure recently took the lead to develop a wireless microphone solution plan in ET Docket No. 04-186 which provides minimally sufficient protected channels for wireless microphones centered around channel 37 in the UHF TV band, where available, and channel 11 in the VHF TV band. This plan requires all new white spaces devices to be managed by geolocation and a database and calls for 6 protected UHF channels and 2 protected VHF channels. After a three year transition period, these channels would be reduced to 4 UHF and 2 VHF. Shure recommended that microphones using these protected channels be licensed "by rule" in a way that dispenses with onerous and unnecessary individual licensing. For large-scale events, where additional channels are needed for a specific time in a specific location, microphone users would be able to enter their operating parameters in a database that would create a protective zone around the relevant venue where white space devices would not be permitted to operate during that time and at that location. Shure recommended that users given access to this database for expanded coverage be licensed pursuant to rules that expressly expand and clarify the Part 74 eligibility requirements. See "Shure Presentation: White Space Solutions" *attached to* Letter from Catherine Wang, Counsel to Shure Incorporated, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 04-186 (filed Sep. 25, 2008).

will be discouraged from transitioning if the question of “where to go” remains unanswered. This result clearly runs counter to the Commission’s goals.

Manufacturers are also challenged by the correlation between the ET Docket No. 04-186 outcome and the 700 MHz band clearing. New product development typically represents a multi-million dollar investment, and users routinely look to their preferred vendors to develop products to meet their new needs.¹⁸ Market competition will inevitably require leading manufacturers to create new product lines in accordance with the future spectrum landscape. Development cycle times of 2-3 years are not uncommon for new product lines which typically consist of 2-3 new transmitter models, 2 or more new receiver models and various associated accessories, including antennas, line and distribution amplifiers, and system management software for which new code must be written, verified, and debugged. This timeframe also includes product testing and regulatory approvals for equipment certifications (typically requiring 3-6 months, assuming no problems are encountered). Also included in this timeframe is the process of loading new products into the distribution channel, ordinarily requiring another 2-3 months. In the situation where all 700 MHz LPAS users would be subject to a “flashcut” prohibition on further operations, this supply cycle could stretch out significantly as manufacturers strive to meet a one-time bubble of demand for replacement equipment.

Therefore, for both users and manufacturers, particularly while docket 04-186 remains unresolved, these practical considerations make a flashcut transition nearly impossible to manage successfully. The flashcut rule proposed in the NPRM is unreasonable and, if adopted, will cause undue disruption and confusion, lead to unnecessary significant expenditures by microphone users, and will not, in the end, be an effective mechanism to achieve the Commission’s goal in this proceeding, which is to clear the 700 MHz band of secondary uses.

¹⁸ There is a significant incentive for users to look to their existing vendors to meet new equipment needs even if the vendor is required to develop new products. Familiarity with the user interface, software performance, and interoperability with other equipment are all important. Further, users look to different manufacturers to meet needs based on the strengths of their products for particular applications.

B. Significant Spectrum is Not Available Elsewhere

The NPRM's statement that 300 MHz of spectrum is available to wireless microphones grossly overstates the reality of what spectrum can actually be used by wireless microphone operations. In fact, there is very little useable spectrum available to support users' wireless audio needs.

i. Much of the Spectrum Available by Rule For Secondary Operations Is Occupied or Unsuitable for Wireless Microphone Operations

Section 74.802(a) of the Commission's Rules identifies various spectrum bands in which LPAS wireless microphone operations are permissible on a secondary basis to television. A very significant portion of this spectrum is simply not available because it is occupied by the primary user. Even where active television is not a factor, many of the identified bands are not suitable for wireless microphones due to their long wavelengths, which renders these bands unusable for hand-held or body-worn operations.¹⁹ Others are not suitable for wireless microphones because they are only small slivers of spectrum that cannot support the LPAS wireless microphone operations, and some bands are subject to interference.²⁰

The primary bands used by wireless microphones are the VHF "high band"; 174-216 MHz, and the UHF band; 470-608 and 614-806 MHz. Some microphones use the 944.000–952.000 MHz band, but this band is limited by primary Studio-Transmitter Link operations. After removing the spectrum above 698 MHz, a total of 264 MHz remains available by rule for wireless microphone use. However, it is fallacious to conclude that wireless microphones have the use of all of this spectrum. First, television broadcasting is primary in these bands and in most cities, numerous channels will be occupied by full power, Class A, Low Power, and translator stations even after the Digital TV Transition on February 17, 2009. Furthermore, the Commission is currently considering allowing

¹⁹ For example, the following spectrum bands are not suitable for wireless microphone operations due to long wavelength: 26.100–26.480 MHz; 54.000–72.000 MHz; and 76.000–88.000 MHz.

²⁰ For example, 161.625–161.775 MHz is not used due to small bandwidth. The 450.000–451.000 MHz and 455.000–456.000 MHz bands are not used due to small bandwidth and interference.

unlicensed devices to use these same frequencies, which will dramatically reduce the amount of clear spectrum available to wireless microphones.

ii. Designating the 2020-2025 MHz Band for All Protected Wireless Microphone Operations Is Not A Reasonable Option

PISC's suggestion that all wireless microphones seeking interference protection "move" to the 2020-2025 MHz band is well outside the bounds of a realistic or helpful solution and should be disregarded. First and foremost, the inferior propagation characteristics in the 2020-2025 MHz band will not support contemporary wireless microphone operations. This band is unsuitable for body-worn and hand-held applications due to vastly degraded propagation characteristics in comparison to the VHF and UHF bands. In order to conserve battery life and promote frequency reuse, most wireless microphones are designed with relatively low output levels (*e.g.*, 10-20 mW range).²¹ Despite this modest output level, the propagation characteristics in the VHF/UHF bands enable a microphone signal to propagate through walls and other obstructions over a reasonably significant distance. In contrast, the same output level in the 2020-2025 MHz band will generate a signal that propagates a much shorter distance and attenuates dramatically when obstructions are introduced between the wireless microphone and receiver.

Second, the amount of spectrum that the PISC proposal would make available (5 MHz) for interference-free operations is woefully inadequate to support today's wireless audio uses. A 5 MHz sliver is simply too meager and too narrow an allocation of spectrum to provide meaningful protection for the wireless microphone user community. Wireless microphones are used for high-fidelity applications that require broader emissions relative to other less demanding voice services (*e.g.*, mobile phone service). As a result, a 5 MHz swath of spectrum will not offer enough microphone channels to accommodate even a small-scale event. Wireless audio for everyday television, news, sporting, theater, music, political, business and educational uses requires multiples of this spectrum amount and in some cases many multiples for special events. As a practical

²¹ In many cases, the true EIRP would even lower, *e.g.* 1-2 mW, taking into account body attenuation attributable to the user.

matter, adoption of the PISC proposal would simply eliminate wireless audio for major sporting events for the NFL, NASCAR, the NBA, the PGA Tour, television shows and special events, political conventions, music and theater productions on Broadway, the Las Vegas Strip, in Los Angeles, Nashville, Chicago, and other entertainment centers throughout the United States.

Even if the 2020-2025 MHz band was capable of properly supporting wireless microphone operations, which it is not, the band fails to offer the “greater security” from interference that PISC touts.²² There are no guard bands around this narrow 5 MHz allocation, which happens to be flanked by powerful neighbors on both sides. Sensitive wireless microphone operations would be threatened from spurious emissions originating above and below the band. Millions of mobile satellite transmitters will eventually occupy the 2000-2020 MHz band, including high-powered ancillary terrestrial network repeaters.²³ Thousands of broadcast stations already occupy the 2025-2110 MHz band. In particular, however, the deployment of millions of portable satellite transmitters would diminish any potential utility the 2020-2025 MHz band might offer. In fact, the possibility of adjacent channel interference between devices in the 2000-2020 MHz, 2025-2110 MHz and 2020-2025 MHz bands has been raised on numerous occasions in the AWS-2/AWS-3 proceeding. Given that no acceptable solution has been identified for the parties in the AWS-2/AWS-3 proceeding, it is unlikely that highly sensitive wireless microphones will prove a more suitable candidate for the band. PISC certainly has not put any effort into studying the potential problem spurious emissions from neighboring operations might create for microphones. Although it proposed the 2020-2025 MHz band as a home for wireless microphones, PISC fails to offer even a cursory explanation regarding how it would mitigate the effect of spurious emissions radiating from millions of mobile satellite terminals.

Finally, this proposal is unworkable because there is currently no equipment available for LPAS operations in this band. It would be several years, at a minimum,

²² *PISC Petition* at 33.

²³ *See* 47 C.F.R. § 25.252.

before the industry would be able to bring any equipment to market in this markedly new spectrum location.

IV. Commission Rules Should Not Prohibit U.S. Manufacturers from Developing and Manufacturing 700 MHz Equipment for Export

Shure urges the Commission to limit its proposal to prohibit “the manufacture, import, sale, offer for sale or shipment of [700 MHz LPAS] devices,” to products intended for use in the United States.²⁴ Many other countries and regions of the world authorize wireless microphone operation in frequencies above 689 MHz. Some examples are: Korea (uses 740-752 MHz), Japan (779-789 MHz, 794-806 MHz and 806-810 MHz), China (740-798 MHz), Thailand and Taiwan (794-806 MHz), Europe (748-784 MHz and 784-820 MHz,) and the U.K. (829-865 MHz). Shure is a significant manufacturer of professional wireless microphone equipment for export to and sale, distribution and operation in those countries. Shure is proud of the worldwide recognition of its U.S.-based wireless technology and believes that a Commission rule that restricts the ability of a U.S. company to manufacture, sell, offer, and ship for the purpose of exporting to other countries runs counter to the public interest in strengthening the competitive position of U.S. companies striving to succeed in foreign markets. Such a restriction would directly undermine U.S. employment and compel one of the few remaining U.S.-based technology manufacturing industries to move overseas, eliminating valuable U.S. technology jobs and increasing the trade imbalance with other countries.²⁵ Moreover, such a rule would do nothing to advance the Commission’s goal to clear the 700 MHz band in the United States.

²⁴ 700 MHz NPRM at ¶ 17.

²⁵ See Executive Office of the President of the United States, *2008 Trade Policy Agenda and 2007 Annual Report of the President of the United States on the Trade Agreements Program* at 4 (Mar. 2008). (Noting that growth in U.S. exports are a particularly important element in today’s economy “[a]s we confront an economic slowdown brought about by challenges in the housing and credit markets, traditional drivers of growth such as consumption and investments are being adversely affected. In this environment, strong export growth is playing an important role in supporting the U.S. economy.”)

V. PISC's Allegations That Wireless Microphone Manufacturers Have Violated Commission Rules Are Erroneous and Should be Dismissed

Shure strongly objects to the misinformation and unfounded accusations that are present throughout the PISC "Petition" regarding wireless microphone manufacturers. At the outset, Shure observed that there are a number of arguments and insinuations contained in the PISC petition that appear to be primarily aimed at discrediting the wireless microphone community and distracting the Commission from the real issues to be addressed in this proceeding as well as issues in ET Docket No. 04-186, a proceeding in which a number of parties want free access to the unassigned TV channels so that mass marketed consumer devices will be able to operate on those channels, even if incumbent wireless microphone operations experience devastating interference. Not only are these tactics harmful to the wireless microphone community, but they also demean the Commission's reasoned and rational rulemaking process and undermine its spectrum management policies.

PISC's Petition offers up a volley of allegations directed at wireless microphone manufacturers generally regarding the sale and marketing of wireless microphones in the 700 MHz band.²⁶ Furthermore, PISC's Petition and suggested remedies are based on the faulty premise that the current issues in the 700 MHz band were caused by the marketing practices of wireless microphone manufacturers. Accordingly, Shure is forced to point out the deficiencies associated with PISC's allegations in order to address the underlying illogic of PISC's Petition. PISC has so mixed its Petition issues with its "complaint," that even the Commission considers PISC's allegations to be part of its Petition.²⁷

Even a casual review of the rules and statutes cited by PISC demonstrate that they do not by their terms prohibit the wireless microphone manufacturer conduct that PISC

²⁶ PISC also attacks Shure and several other manufacturers specifically. This rulemaking proceeding is not the appropriate forum either for such specific attacks on a party or any rebuttal thereof, however specious PISC's arguments may be. Therefore, Shure does not address these specifically directed to Shure herein and instead limits its comments to the situation of wireless manufacturers as a whole.

²⁷ See *NPRM* ¶ 20 (citing to three alleged violations that do not appear in the Petition but can be found in PISC's "complaint").

alleges. PISC's self-styled informal "complaint"²⁸ contends that wireless microphone manufacturers have violated Commission 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 devices.”

PISC specifically argues that manufacturers have violated Section 302a(b) of the Communications Act, as amended,²⁹ and Section 2.803(a) and (g) and Section 2.927 of the Commission’s Rules. However, as discussed in detail below, an inspection of those provisions and regulations quickly reveals that they do not support PISC’s “complaint.” Accordingly, the Commission should reject PISC’s specious arguments.

A. Commission Rules Do Not Mandate that Manufacturers Of Wireless Microphones Restrict Sales To Particular Users

Contrary to the implications of PISC’s “complaint,” the Commission’s rules do not require wireless microphone manufacturers to restrict sales of equipment authorized under Part 74, Subpart H of its rules to particular entities. In its Petition, PISC alleges that wireless microphone manufacturers violated Section 302a(b) of the Communications Act³⁰ and Section 2.803 of the Commission’s Rules³¹ by marketing and selling to the general public equipment that, according to PISC, may only be sold to certain classes of users. PISC is reading a requirement into the rules that does not exist. Section 302a(a) permits the Commission to make regulations governing the interference potential of

²⁸ PISC declined to file a formal complaint with the Commission and only requested Commission action under 47 C.F.R. § 1.41. Given the paucity of its legal analysis and the strict requirements under the Commission’s rules that a complainant support its claims with actual legal authority, it is no wonder PISC opted for the approach it took, *i.e.*, histrionics over substance.

²⁹ PISC’s “complaint” references Section 302(b) of the Communications Act; Shure assumes that PISC actually intended to cite to section 302a(b) since Section 302(b) of the Communications Act was repealed by Congress on June 5, 1936.

³⁰ 47 U.S.C. § 302a(b).

³¹ 47 C.F.R. § 2.803.

devices capable of interfering with radio reception.³² Section 302a(b) states that “No person shall manufacture, import, sell, offer for sale, or ship devices or home electronic equipment and systems, or use devices, which fail to comply with regulations promulgated pursuant to this section.”³³ There is no language in Section 302a that restricts the sale of certified devices. Thus, contrary to the conclusions asserted by PISC, Section 302a(b) of the Act does not limit to whom wireless microphone providers can sell their Commission certified equipment.

Without having any statutory authority, PISC then alleges that wireless microphone manufacturers have violated Section 2.803 of the Commission’s Rules. Section 2.803 of the Commission’s Rules, entitled “Marketing of radio frequency devices prior to equipment authorization,” is equally unsupportive of PISC’s contentions. The substance of the rule states that “no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship, or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless ... such device has been authorized by the Commission in accordance with the rules in this chapter.”³⁴ Accordingly, this provision only places restrictions on *when* a device can be sold or marketed, *i.e.*, not before the Commission has granted an appropriate equipment authorization based on appropriate technical testing. This section does not dictate to *whom* equipment can be sold. In fact, in every instance cited by PISC when the Commission took enforcement action under this rule, the Commission asserted that the offender was selling equipment that had not or could not receive a proper equipment certification.³⁵ Thus, wireless microphone manufacturers comply with Section 2.803 of

³² 47 U.S.C. § 302a(a). The Commission has stated that “the purpose of [section 302] is to ensure that radio transmitters and other electronic devices meet certain standards to control interference *before* they reach the market.” *Pilot Travel Centers LLC, Knoxville, Tennessee*, Order & Consent Decree, 21 FCC Rcd 5308 at ¶ 1 of Consent Decree (May 11, 2006) (order adopting a consent decree regarding the offering for sale radio frequency devices without the required Commission equipment authorization) (emphasis added).

³³ 47 U.S.C. § 302a(b).

³⁴ 47 C.F.R. § 2.803(a).

³⁵ See *CB Shop & More, LLP*, File No. EB-07-DV-058, *Forfeiture Order* (Mar. 21, 2008); see also *David P. Pace Jr.*, File No. EB-06-LA-252, *Forfeiture Order*, 23 FCC Rcd 2825 (Feb. 28, 2008); *Ramko Distributors, Inc.*, File No. EB-06-SE-124, *Notice of Apparent Liability for*

the Commission's Rules by manufacturing equipment that meets the Commission's technical standards and obtaining the required equipment authorization prior to engaging in any marketing.³⁶

It is important to note that there are instances where the Commission's rules do impose eligibility verification requirements on manufacturers. The Commission has specifically imposed verification obligations on manufacturers of certain demodulators and TSP products prior to sale.³⁷ The Commission has also imposed specific verification obligations on providers of services under the Commission's jurisdiction prior to the sale of those services to others.³⁸ In each instance, the obligation is a specific and express rule, adopted after the public notice and comment required under the Administrative Procedures Act. Thus, it is clear that the Commission understands how to create rules that obligate equipment manufacturers or service providers to verify that purchasers meet certain criteria, but it has not instituted such a requirement in the context of wireless microphones authorized under Part 74. In the absence of an express mandate in the rules,

Forfeiture, 22 FCC Rcd 7161 (Mar. 30, 2007); Charles E. Vance III d/b/a CB Candy Electronics, File No. EB-04-LA-133, *Forfeiture Order*, 22 FCC Rcd 5031 (Mar. 16, 2007); Ben Metzger d/b/a 1 Stop Communications / 1 Stop CB Shop, File No. EB-05-TP-330, *Forfeiture Order*, 22 FCC Rcd 3980 (Mar. 2, 2007); Love's Travel Stops and Country Stores, Inc., File No. EB-05-DL-181, *Forfeiture Order*, DA 06-1936 (Sep. 29, 2006); TravelCenters of America, File No. EB-05-PO-029, *Forfeiture Order*, DA 06-1334 (Jun. 29, 2006); Hightech CB Shop, File No. EB-05-TP-066, *Forfeiture Order*, 20 FCC Rcd 12514 (Jul. 27, 2005); Pilot Travel Centers, LLC, Docket No. 04-272, *Notice of Apparent Liability for Forfeiture*, 19 FCC Rcd 23113 (Nov. 23, 2004).

³⁶ PISC also references section 2.927(c) of the Commission's rules. As more fully detailed below, that section fails to support PISC's contentions that wireless microphone manufacturers have violated Commission rules.

³⁷ Section 73.9002, covering "Sale or distribution of demodulators, covered demodulator products, and peripheral TSP products," provides that "[n]o party that manufactures ... a demodulator shall sell or distribute in interstate commerce such Demodulator unless: ... (2) such sale is to a party that has committed in writing" that the party is a bona fide reseller, a licensed digital television broadcaster, or a multichannel video programming distributor. 47 C.F.R. § 73.9002(a) & (d).

³⁸ Section 64.1195(h) provides that "[a]ny person who manufactures, assembles, modifies, imports, exports, sells, or distributes any electronic, mechanical, or other device or equipment, knowing or having reason to know that the device or equipment is primarily of assistance in the unauthorized decryption of satellite cable programming, or direct-to-home satellite services, or is intended for any other activity prohibited by subsection (a), shall be fined not more than \$500,000 for each violation, or imprisoned for not more than 5 years for each violation, or both. 47 C.F.R. § 64.1195(h).

a similar verification requirement cannot be simply “read” into the Part 2 rules. Such a novel and unfounded interpretation will turn the FCC’s equipment regulation on its head, apparently imposing a long chain of heretofore unknown service and licensing-related obligations on manufacturers of equipment for not only Part 74 services, but also the General Mobile Radio Service, microwave, satellite, and all other licensed radio services.

In sum, none of the statutory or rule provisions that PISC claims are being violated by wireless microphone manufacturers actually mandates that manufacturers restrict sales in any way other than to ensure that they have duly obtained an equipment authorization under Part 2. This reflects the long held sensible approach imbued in Commission regulation that the manufacturer’s obligation is to prevent interference by ensuring that equipment meets relevant technical standards and has been subjected to the equipment authorization process. Since PISC’s contentions lack any legal foundation, their arguments must be dismissed.

B. Eligibility Is A Commission Decision

PISC further contends that marketing practices of wireless microphone manufactures willfully violates the Commission’s rules by advertising to users who are ineligible to use those devices. Like their arguments above, PISC’s allegations are not based on any actual Commission rules and, in fact, cannot be followed.

Manufacturers have not been charged with the responsibility and, in fact, cannot assess eligibility of the eventual user. Contrary to PISC’s contentions, the Commission does not assess eligibility based on *who* seeks a license. Rather, as the Commission has stated in the context of low power auxiliary stations, the use of that spectrum is “governed by type of use rather than type of licensee.”³⁹ The Commission in the initial order authorizing wireless microphones stated: “Although we are not establishing specific eligibility herein for nonbroadcast entities other than motion picture producers

³⁹ Amendment of Parts 21, 43, 74, 78, and 94 of the Commission’s Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, and Cable Television Relay Service, Docket No. 90-54, *Report and Order*, 5 FCC Rcd 22 at ¶ 86 (Oct. 26, 1990).

and cable system operators, the Commission will consider on a case-by-case basis applications by other groups such as live entertainment program producers, etc.”⁴⁰ As the Commission has the duty to review and grant licenses, it has not seen fit to delegate that responsibility to wireless manufacturers, despite PISC’s contentions.

i. Wireless Microphone Manufacturers Are in No Position to Predict User Eligibility

PISC assumes in its “Petition” that certain users by their very nature are ineligible to obtain a license from the Commission to use wireless microphones. This contention is nonsensical and is contrary to the Commission’s stated methodology as noted above and its actual practices. For example, consistent with a licensing approach that focuses on *use* and not *user*, the Commission has granted Part 74 licenses to a range of nonbroadcast entities – including houses of worship, hotels and convention centers, athletic departments, universities, and manufacturing corporations.⁴¹ There is a long history of awarding these licenses, and such licenses have been granted as recently as April 2008. Obviously, the Commission does not prejudge eligibility based on the nature of the party seeking a license.

Unlike PISC, the Commission is not focused on *who* the licensee is. As noted in the Commission’s initial wireless microphone order: “We are confident that groups other than broadcast licensees can use these frequencies responsibly, obtaining the benefits of such use while being aware of the interference possibilities associated with it.”⁴² Nor has the Commission been unaware of the use of wireless microphones by nonbroadcast entities. As the Commission observed “wireless microphones are typically used in

⁴⁰ *VHF Wireless Microphone Order* at ¶ 30.

⁴¹ *See, e.g., Kansas City Youth for Christ, Inc.*, Radio Station Authorization, File No. 0002380370 (Effective Nov. 16, 2005 through Feb. 1, 2014); *MGM Grand Hotel Las Vegas Inc.*, Radio Station Authorization, File No. 0002693092 (Effective July 26, 2006 through Oct. 10, 2014); *University of Washington, Athletics Department*, Radio Station Authorization, File No. 0002840497 (Effective Dec. 8, 2006 through Feb. 1, 2015); *Walt Disney World Co.*, Radio Station Authorization (Effective Mar. 26, 2002 through March 26, 2012)(no file number was assigned to this authorization); *The Boeing Company*, Radio Station Authorization, File No. 0003345019 (Effective Apr. 8, 2008 through Apr. 8, 2016).

⁴² *VHF Wireless Microphone Order* at ¶ 30.

settings such as lecture halls, auditoriums and theaters” and noted that Part 74 wireless microphones were used for very similar purposes.⁴³

The only conclusion that can be drawn from the Commission’s statements and actions is that any party *may* be eligible for a license to use a wireless microphone. Even if there is now a desire to require manufacturers to assess eligibility, they are simply in no position to predict what entity or user would be eligible for a license. Given that licensing eligibility is determined on a case-by-case basis, by the FCC based on use, wireless microphone manufacturers themselves cannot make such judgments and are only capable of ensuring compliance with technical rules and obtaining an equipment authorization from the Commission for the products they wish to sell. PISC’s arguments to the contrary are, therefore, unfounded.

C. PISC’s Claim that Manufacturers Have Violated Commission Rules Regarding Deceptive Advertising is Unfounded

PISC also alleges that wireless manufacturers are deceiving the public as to the requirement for a Commission license and the limitations imposed by the Commission on the use of those devices. PISC specifically contends that wireless microphone manufacturers are advertising for sale devices in contravention of Section 2.927(c) of the Commission’s rules.⁴⁴ Specifically, PISC alleges that manufactures 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 rules. As noted previously, such allegations require a fact intensive and specific inquiry not conducive to an NPRM process. Furthermore, as deceptive trade practices are traditionally reviewed by the Federal Trade Commission (15 U.S.C. § 45(a)(2)), the FCC may lack the authority to assess PISC’s contention that wireless microphone manufacturers marketed their devices unlawfully. Nevertheless, Shure will address the glaring errors of PISC’s argument.

⁴³ Station Identification for Part 90 Wireless Microphone Use, *Order*, 8 FCC Rcd 15 at ¶ 3 (Jul. 19, 1993).

⁴⁴ 47 C.F.R. § 2.927(c). PISC also argues that manufacturers are engaging in deceptive practices.

Section 2.927(c) governs a specific type of advertising: “No person shall, in any advertising matter, brochure, etc., use or make reference to an equipment authorization in a deceptive or misleading manner or convey the impression that such equipment authorization reflects more than a Commission determination that the device or product has been shown to be capable of compliance with the applicable technical standards of the Commission’s rules.” In other words, Section 2.927(c) protects against advertisements that expand the FCC equipment authorization beyond merely an acknowledgement that the equipment/wireless microphone meets the Commission’s technical requirements. There is no allegation that any manufacturer has misrepresented an equipment authorization in this way.

The fallacy of PISC’s arguments are highlighted by the only Commission decision analyzing the application of Section 2.927(c) regarding a complaint filed by the Telecommunications Research and Action Center (TRAC).⁴⁵ In a prior proceeding, the Common Carrier Bureau (now the Wireline Competition Bureau) had ruled that the use of the term “FCC-Approved” in advertising by manufacturers of Part-68 registered telephone terminal equipment did not violate Section 2.927(c) of the Commission’s Rules merely because it could be misinterpreted by some consumers as denoting a Commission imprimatur of the product’s quality.⁴⁶ The Commission agreed with the Bureau’s decision and was not persuaded by TRAC’s contention that a violation of Section 2.927(c) should be found because it was conceivable that an incorrect interpretation could be given to the statement “FCC-Approved,” or because such statement is capable of incorrect interpretation.

For PISC’s concern regarding a potential Section 2.927(c) violation to even begin to have any merit, the complained of language must be about how a manufacturer

⁴⁵ Complaint and Petition for Rulemaking Concerning Advertising of Terminal Equipment Registered Under Part 68 of the Commission’s Rules filed by the Telecommunications Research and Action Center, *Memorandum Opinion and Order*, 1 Fcc Rcd 147 (Oct. 21, 1986) (“*Commission’s TRAC Decision*”).

⁴⁶ Complaint and Petition for Rulemaking Concerning Advertising of Terminal Equipment Registered Under Part 68 of the Commission’s Rules filed by the Telecommunications Research and Action Center, *Memorandum Opinion and Order*, 59 RR 2d 1320 (Mar. 10, 1986) (“*Bureau’s TRAC Decision*”).

specifically characterizes its FCC authorization or certification. While such a fact specific inquiry is inappropriate for the NPRM process, PISC has not made such allegations and its arguments in this respect should be dismissed.

VI. The Commission Should Update Rules Relating to Wireless Microphones to Eliminate Unnecessary and Burdensome Requirements

Shure does agree with PISC on one general point: that the FCC's rules that were put in place for wireless microphones over 30 years ago and that have been in place without any significant interference problems during that time, do need to be updated to match the intervening development of this important technology and the Commission's more recent strong preference for eliminating or streamlining unnecessary and burdensome outmoded regulations.

The FCC should eliminate outmoded onerous individual licensing provisions for wireless microphones and, where appropriate, permit wireless microphone users either to operate by "rule," *i.e.*, without individual licensing or, pursuant to Part 74 under clarified and expanded eligibility rules.⁴⁷ Whatever regulatory direction the Commission chooses, wireless microphone operations must have interference protection from new proposed white space devices, if any, that are permitted pursuant to rules developed in ET Docket No. 04-186. Shure opposes the "plan" offered by PISC that would limit all protected wireless microphone operations to a newly designated band 2020-2025 MHz⁴⁸ and allow all wireless microphones other than existing Part 74 licensees, to be licensed by rule but subject to interference as if operating equipment on par with Part 15 equipment in the core TV bands. PISC's proposal that wireless microphones be treated on par with Part 15 equipment in the unassigned TV channels in the core TV spectrum may reflect PISC's true agenda in this proceeding but is nonetheless completely unsupported, ill-advised, and

⁴⁷ See Note 17 *infra* (proposing changes to wireless microphone licensing to permit operation by rule and updated Part 74 licensing in conjunction with a protected spectrum channel plan).

⁴⁸ See Section IV.B. *infra*.

is well outside the bounds of this proceeding. As such, the Commission should reject PISC's request.

Respectfully submitted,

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