

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
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)	
Amendment of Parts 0, 1, 2, 15 and 18 of the Commission’s Rules Regarding Authorization of Radiofrequency Equipment)	ET Docket No. 15-170
)	
Request for Allowance of Optional Electronic Labeling for Wireless Devices)	RM-11673
)	

COMMENTS OF SHURE INCORPORATED

I. Introduction

Shure Incorporated (“Shure”), by its undersigned counsel, hereby submits these Comments in response to the Notice of Proposed Rulemaking (“NPRM”) in the above-captioned proceeding.¹ Shure is the leading U.S. manufacturer of wireless microphones and other professional audio products that have operated for decades in TV broadcasting spectrum. Wireless microphone use has grown rapidly, and today they provide critical support to a wide range of sectors including TV broadcasting, news casting, theater, live music, sports, religious, civic and academic institutions. Shure supports the Commission’s effort to update the equipment approval requirements to better address the realities of device manufacturing and to keep pace with the accelerating introduction of a wide variety of devices. As it considers amendments to its equipment authorization rules, Shure believes that the Commission can undertake several measures that would benefit end users, reduce regulatory costs for equipment manufacturers, and

¹ *Amendment of Parts 0, 1, 2, 15 and 18 of the Commission’s Rules Regarding Authorization of Radiofrequency Equipment, ET Docket No. 15-170, Request for the Allowance of Optional Electronic Labeling for Wireless Devices, RM-11673, Notice of Proposed Rulemaking, FCC 15-92 (rel. July 21, 2015) (“Notice” or NPRM”).*

provide greater flexibility for both consumers and manufacturers, while still ensuring that such equipment is operated in a safe manner in full compliance with FCC requirements. Specifically, Shure supports rule amendments that would enable end users to undertake certain software and firmware updates on equipment already in the field in order to ensure that equipment operates in compliance with the relevant technical parameters. Shure also supports proposed changes to equipment labeling requirements that would provide added flexibility while also ensuring that consumers and other parties have ready access to necessary equipment information.

II. Current Equipment Authorization Rules Should be Updated and Aligned to Address Dramatic Technological and Market Changes

The Commission explains at the outset of the Notice that it “last comprehensively reviewed its equipment authorization procedures more than fifteen years ago,” and that in the interim dramatic change has occurred in the way radiofrequency (“RF”) equipment is “designed, manufactured, and marketed.”² Given these changes the Notice proposes and seeks comment on rules intended to “better align our equipment authorization procedures with the current state of equipment development, design, and manufacturing practices, which in turn will promote significant cost savings, reduce the burdens, and avoid any unnecessary delay associated with the equipment authorization process – especially for applications involving new technologies and new devices that include multiple technologies.”³

As a prominent manufacturer of RF devices, Shure fully appreciates the staggering changes that have occurred in the design, manufacture and marketing of such equipment since the Commission’s equipment authorization rules were last updated, and enthusiastically supports

² Notice at ¶ 2.

³ *Id.* at ¶ 23.

the effort in the instant proceeding to update these rules. During the past fifteen years RF equipment has become more complex, employing transmission and modulation schemes that only recent technological developments enable, while the Commission's own service rules have simultaneously evolved to facilitate more intense use of spectrum by diverse end users.⁴ Ensuring that the equipment authorization rules can accommodate these technological advances and revised service rules alone merits a revisit of the Commission's equipment authorization process, but the issue becomes even more urgent given that during the same span of time the sheer volume of devices submitted for authorization has grown by a full order of magnitude or more.⁵ With more technological and service rule changes on the horizon, the Commission should expedite changes that would modernize the equipment authorization rules to ensure that innovative and spectrally efficient new technologies can continue to be brought to market quickly.

III. The Commission's Revised Rules Should Ensure that Software and Firmware Updates to Existing Equipment Can Be Undertaken in a Reasonable and Economical Manner

Shure's products have historically been primarily classified as low-power auxiliary devices authorized under Part 74 of the Commission's Rules to operate on a secondary basis in the TV broadcasting and other spectrum. On August 11, 2015, the Commission released two orders that will significantly impact the future operation of wireless microphones in the United

⁴ For example, geolocation database technology and multiple input/multiple output transmission schemes have both become prominent technologies since the turn of the century.

⁵ For example, the Commission's Equipment Authorization System ("EAS") reflects a total of 205 entries for RF transmitters certificated during January 2000, whereas in January 2016 the number increased more than ten-fold to 2,974. Based on a search of EAS from January 1 through January 31 of both years for approval of original equipment authorization grants.

States. First, in the *Part 15 Report and Order*,⁶ the Commission established a new regulatory framework to allow wireless microphones and other devices to operate on an unlicensed basis under Part 15 in the 600 MHz and television broadcast bands. Second, the *Wireless Microphones Order*⁷ established a new, long-term framework for the operation of wireless microphones under Part 74 in newly identified spectrum to be made available in addition to VHF and UHF spectrum for wireless microphone use.

Through these two orders, the regulation of wireless microphones is, once again, in a period of significant transition. Therefore, Shure's interests in the FCC's equipment authorization process extend to both new products under development, as well as existing microphones already deployed and in the field, and specifically, how it will accommodate a transition of new equipment under development as well as existing equipment in the field under the new operational frameworks. Through the recommendations in these comments, Shure believes that the Commission can ensure that this and future regulatory transitions can be accomplished as smoothly as possible.

⁶ See generally *Amendment of Part 15 of the Commission's Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37; Amendment of Part 74 of the Commission's Rules for Low Power Auxiliary Stations in the Repurposed 600 MHz Band and 600 MHz Duplex Gap; and Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, FCC 15-99 (rel. Aug. 11, 2015) ("*Part 15 Report and Order*").

⁷ See generally *Promoting Spectrum Access for Wireless Microphone Operations; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, FCC 15-100 (rel. Aug. 11, 2015) ("*Wireless Microphones Order*").

A. Manufacturers and End Users Should Be Permitted to Undertake Software and/or Firmware Updates for Equipment Already in the Field, Especially Those Subject to Regulatory Transition

The NPRM seeks comment on a range of issues related to devices with software-based capabilities.⁸ Specifically, the Commission proposes to replace requirements that apply only to devices specifically classified as “software defined radios” with broadly applicable rules, based in part on the current Commission practices regarding software control of radio parameters.⁹ Shure agrees with this proposal. As the Commission recognizes, the use of software (and firmware) upgrades to change radiofrequency operating parameters of certified devices has become widespread, and has been beneficial to both manufacturers and consumers, since it allows manufacturers to obtain approval of products with an initially limited set of capabilities and then enable new frequency bands, functions and transmission formats to be added to already-approved equipment.¹⁰

As a manufacturer of equipment that is already in the field and subject to significant regulatory transitions over the coming months and years, Shure is examining ways to allow that equipment to continue to function in compliance with the Commission’s rules. The NPRM proposes to “remov[e] the SDR designation from grants of certification and incorporat[e] any necessary requirements for software control of RF parameters and software security for all devices in our general certification rules and guidance.”¹¹ Shure agrees with this approach. Shure likewise agrees with the NPRM’s proposal to require that an applicant for certification

⁸ See NPRM, ¶¶43-46.

⁹ See NPRM, ¶¶ 19, 43-46.

¹⁰ See NPRM, ¶¶ 44-45.

¹¹ See NPRM, ¶45.

explicitly describe the RF device's capabilities for software configuration and upgradeability in the application for certification (frequency bands, power levels, modulation types, etc.), and allow manufacturers to specify which parties will be authorized to make software changes (*e.g.*, the grantee, wireless service provider, other authorized parties) and the software controls that are provided to prevent unauthorized parties from enabling different modes of operation. Shure agrees with this proposal, and further believes that parties authorized to undertake manufacturer-developed and secured software/firmware upgrades should include end users as such authorized parties. Through this framework, and as spectrum policy changes in the future, software/firmware upgrades can be used to tune equipment to the correct ranges, and at the correct power levels, and will ensure that end users can continue to use equipment lawfully with minimal disruption and without the need to necessarily undertake factory installation of manufacturer-developed and secured software/firmware.

Establishing rules that will allow manufacturers and end users to undertake such updates will also provide customers more assurance that the equipment that they purchase will not necessarily become obsolete or difficult to update as the FCC continues to change its spectrum policy. Just a few short years ago, wireless microphone users had to endure the significant cost and disruption of having to replace perfectly good operating equipment that had not reached the end of its useful life with new equipment to comply with the Commission's announcement in that wireless microphone operations had 6-months to cease operating in 700 MHz band.¹² Users are already well-accustomed to performing their own manufacturer-developed and secured software and firmware updates on numerous types of electronics products without the need for factory installation (computer software updates, smartphone operating system updates, smart

¹² See, *e.g.*, FCC Enforcement Advisory No. 2010-03, DA 10-969 (rel. May 26, 2010).

appliance updates, etc.). And of course, device manufacturers will be available to assist owners with questions or problems. Allowing users to undertake this effort themselves would serve the public interest by making it easier for users to make changes to ensure that equipment continues to comply with Commission rules and therefore would significantly increase the likelihood that such updates in fact will be undertaken.

B. The FCC's Rules Should Allow for Refurbishing and Relabeling for Part 15 and Part 74 Devices

The NPRM proposes to clarify the FCC's procedures for the repair and refurbishing of certified devices. Specifically, it proposes to formally adopt the FCC's current practice whereby a third party that repairs or refurbishes certified equipment to the device's original specification does not need to submit an application for certification if the equipment continues to operate as specified in its current grant.¹³ Shure supports the Commission's codification of these processes, and recommends that the Commission adopt rules to provide that equipment that cannot be upgraded in the field through firmware or software updates must be returned to the original manufacturer or to an authorized service facility for modification to ensure that the equipment operates under the technical requirements established by the Commission. Absent a clear framework to allow equipment to remain in the field through firmware/software upgrades and/or refurbishment, many of the wireless microphones that have been newly purchased within the last several years (after the last regulatory transition) would be at risk for non-conformity with the Commission's new operational requirements. The Commission should ensure that its rules allow for manufacturers to release end-user updates or to otherwise allow for manufacturer or third-

¹³ See NPRM, ¶¶73-74.

party refurbishments to ensure that end users are minimally inconvenienced by changes in operating requirements.

IV. The Commission's Rules Should Recognize Reasonable Alternative Means for Equipment Labeling

The NPRM proposes to implement the provisions of the E-LABEL Act by codifying electronic labeling procedures. Specifically, the FCC proposes to amend its regulations to comply with the provisions of the E-LABEL Act, and also to amend its labeling regulations to address devices that are too small to be legibly labeled with an FCC ID.¹⁴ Shure supports these changes. In particular, the FCC's rules should ensure that display of Part 15 compliance information be allowed on electronic display, as well as in user manuals or on the manufacturer's website rather than on the device itself. This includes the information required under Section 15.19(a)(3) of the Commission's Rules requiring display of the following information: "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." Shure believes that codifying multiple means by which this statement can be delivered to end users, including over electronic displays and other means, will provide additional regulatory flexibility to device manufacturers, while ensuring that consumers continue to see the relevant device compliance information under this rule.

¹⁴ See NPRM, ¶ 93. The proposed rule will allow a radiofrequency device with an integrated electronic display to electronically display any labels required by the FCC's rules, including FCC ID and any warning statements or other information required to be placed on a physical label on the device. See NPRM, ¶ 97

IV. Conclusion

Shure appreciates the opportunity to comment on the Commission's proposals, and looks forward to working with the Commission to effectuate changes to its equipment authorization rules to provide flexibility for equipment potentially subject to changing operational and regulatory requirements. Shure believes that the proposals herein will benefit both end users and manufacturers, and will help facilitate a prompt migration of wireless microphones from 600 MHz frequencies repurposed during the pending incentive auction.

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