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October 31, 2008

Via ECFS

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th St., SW
Washington, DC 20455

**Re: *Ex Parte* Letter in ET Docket No. 04-186; Unlicensed
Operation in the TV Broadcast Bands**

Dear Ms. Dortch:

On October 15, 2008, Chairman Kevin Martin announced that the Commission plans to vote on an order in the above-captioned proceeding at its upcoming November 4, 2008 agenda meeting. As announced, the order, among other things, states that the Commission's laboratory and field tests as analyzed in the OET test report released the same day demonstrate a "proof of concept" of spectrum sensing technology as an interference protection methodology to safeguard wireless microphone and television operations.

Shure is on record as supporting an opportunity for public comment on the Commission's test report and associated peer evaluation.¹ We believe that such comment would provide the Commission and the affected public an important opportunity to consider input from technical experts in the field, including "new and different criticisms which the agency might find convincing."²

Based on the observation of the FCC's test by Shure's engineers, Shure believes that the test data show that the sensing equipment failed to detect wireless microphones in laboratory and field tests and therefore these tests do not establish that spectrum sensing

¹ See Shure Comments in Support of Emergency Request, ET Docket Nos. 04-186, at 1 (filed Oct. 21, 2008); see also Shure Ex Parte Letter from Catherine Wang, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 04-186, at 8 (filed Oct. 28, 2008).

² See *Association of Battery Recyclers, Inc. v. U.S. Environmental Protection Agency*, 208 F.3d 1047, 1059 (D.C. Cir. 2000) (citation omitted) (identifying the benefits resulting from public comment).

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is a viable means of protecting wireless microphones from white space device interference. Despite these failures, we understand that the Commission's order nonetheless commits to authorizing the mass distribution of unlicensed equipment that relies solely on spectrum sensing as an interference protection methodology subject only to a novel "enhanced" equipment certification process not previously identified or discussed on the record. We understand that the Commission's intent is to allay public concern of the repeated failures of spectrum sensing devices and the potential for devastating interference to wireless microphones and television caused by spectrum sensing devices by creating a process by which future spectrum sensing equipment (presumably containing different or significantly more mature technology) will be examined and tested to confirm that they will not, in fact, cause interference to wireless microphones and television and thus may be safely distributed *en masse* in the consumer marketplace.

I. The "Enhanced" Certification Process

A. The future process proposed by the Commission to evaluate spectrum sensing devices is critically important because wireless microphones are used for purposes that demand consistent, high quality interference-free transmissions. In this case, "good enough" is simply not good enough. Users will need interference protection measures including spectrum sensing measures, to be 100% effective 100% of the time. Further, once "pure" spectrum sensing devices are distributed, those devices will ignore other protection measures such as the geolocation/database approach also identified in the order which will, as a practical matter, render spectrum sensing as the sole defense against interference to extensive wireless microphone uses of channels 21-51.³

B. The future proposed process is not appropriate for the equipment certification process under Part 2 of the Commission's Rules. The certification process is not designed to be the proving ground or beta test to develop new technical standards. It is intended to be the ministerial technical assessment of whether equipment complies with technical and operational rules that have been established in the

³ We understand that the Commission's order will permit portable devices relying solely on spectrum sensing to operate in channels 21-51. Based on the extensive use of wireless microphones today, most significant production events will need to find ways to operate wireless microphones in channels 21-51, as well as in channels below channel 21 in which the FCC's order identifies as accommodating only fixed not portable devices. Thus, whether spectrum sensing will be effective in protecting against white space device interference to wireless microphones is a matter of great importance to all significant productions using wireless microphones including TV productions, sports, Broadway and other theaters, house of worship, large business conferences, etc.

rulemaking process. The certification rules under Part 2 infer that technical standards must be in place before a device can undergo certification.

Section 2.901 of the Commission's Rules, "Basis and Purpose, provides that the technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated. In addition to the technical standards provided, "the rules governing the service may require that such equipment .. receive an equipment authorization from the Commission by one of the following procedures: certification or registration."

The novel hybrid/certification process to be introduced in this order was not proposed in the first two Notices in this proceeding and the process and standards that will be applied have not been discussed or proposed. There has been no occasion to offer insight on this hybrid test/certification scheme. As such, it is not a "logical outgrowth" of the Notices or record.⁴ Most of the technical standards that are relevant to spectrum sensing have not been worked out or subject to notice and comment in this proceeding. Therefore, we strongly believe that notice and comment procedures are required for any future step to authorize spectrum sensing equipment.⁵ Notice and comment should occur at all key stages in which these new procedures and standards are being developed, *i.e.* in advance of launching the new tests, in connection with the proposed new test protocol and new standards to measure, as well as on the new report analyzing test results. Notice and comment at these key stages is critical to ensure that the evaluation of new equipment embodying presumably new and improved spectrum sensing technology can and will, in fact, protect incumbents from interference.

C. The future equipment evaluation process must be a Commission-level process -- not one that is handled solely by the Commission's Office of Engineering and Technology staff under delegated authority given the lack of clear standards under which

⁴ "[A] final rule will be deemed to be the logical outgrowth of a proposed rule if a new round of notice and comment would *not* provide commenters with their first occasion to offer new and different criticisms which the agency might find convincing." *See Assoc. of Battery Recyclers* at 1059 (citation and internal quotations omitted).

⁵ The D.C. Circuit has identified the distinct difference between a new rule and an interpretive rule. Specifically, the Court has stated that there is a "distinction between rulemaking and a clarification of an existing rule. Whereas a clarification may be embodied in an interpretive rule that is exempt from notice and comment requirements, new rules that work substantive changes in prior regulations are subject to the APA's procedures." *Sprint Corporation v. Federal Communications Commission*, 315 F.3d 369, 374 (D.C. Cir. 2003) (citation omitted). The Court also stated that "when an agency changes the rules of the game....[and requires a party to] assume additional obligations..... more than a clarification has occurred." *Id.*

spectrum sensing devices must operate for certification. The Commission cannot delegate to OET authority to come up with new standards. OET is only able to perform those functions specifically enumerated in Section 0.31 of the Commission's Rules, and functions given to it pursuant to delegated authority under Section 0.241 of the Commission's Rules. In particular, OET staff operating pursuant to delegated authority may act only on those matters which are "minor or routine or settled in nature."⁶ The specific delegation of authority to OET provides that any issues that come before it that present "new or novel questions of fact, law or policy which cannot be resolved under outstanding precedents and guidelines" must be referred to the Commission for disposition.⁷ If the Commission does not lay out clear standards with respect to future spectrum sensing equipment, how to define interference in the context of tests of spectrum sensing devices, etc., relegating these critical issues to the certification process would put OET in the position of developing new policies in violation of its delegated authority. Therefore, while OET may conduct testing for the enhanced certification process, the applicable standards and decisions as to whether spectrum sensing devices have qualified for certification should be left to the Commission.

D. The Commission should specify that the future process will include comprehensive and rigorous tests, open to the public. Testing must evaluate not only sensing but also interference potential. Test parameters should include, at a minimum, Dynamic Frequency Selection parameters for wireless microphone protection. Those include:

Channel Availability Check Time: 30 sec
Non-Occupancy Period: 60 minutes
Channel Detection Time: 500 msec
Channel Setup Time: 2 sec
Channel Opening Transmission Time (Aggregate transmission time): 100 msec
Channel Move Time (In-service monitoring): 2 sec
Channel Closing Transmission Time (Aggregate transmission time): 100 msec

Notice and comment will be needed since there may be other parameters that need to be tested. Testing must include open, observable laboratory and field testing in real world situations. Field testing must include the sports and entertainment venue and others in representative setting.

⁶ 47 C.F.R. § 0.5(c).

⁷ 47 C.F.R. § 0.241(a)(5).

II. Protected Channels

We reiterate our support for the identification of protected wireless microphone channels (in addition to other protections). With one exception (in 13 markets in which public safety operations are located), the Commission's order does not designate any protected channels for wireless microphone operations. We ask that the Commission identify protected channels as set forth in Shure's earlier proposal. In an effort to identify what could serve as a workable spectrum accommodation to existing wireless microphone users, Shure outlined a plan in which white space devices would be permitted but only if they incorporate geolocation features and the ability to be managed by a dynamic online database in which occupied channels could be registered for protection.⁸ The Shure plan also requires that the database identify an adequate number of protected channels for wireless microphone operations in the core TV bands in each local market. Specifically, at a minimum, Shure noted that 8 protected channels (6 UHF/2 VHF) would be necessary to accommodate small-scale microphone operations for the initial transition period of 36 months following the DTV transition, and 6 protected channels (4 UHF/2 VHF) thereafter. The Shure plan also outlines specific parameters regarding the operation and implementation of such a database.

III. Transition Plan

If the FCC expects wireless microphone operations to congregate in channels 14-21 where portable spectrum sensing devices will not be permitted, it should provide for a transition period. Shure has previously set forth the need for a transition period given the Commission's plan to substantially alter the frequencies in which wireless microphones may operate without having to coexist with other devices.⁹

IV. Rules for the Geolocation Database

Finally, we urge the Commission to open a notice and comment proceeding to determine the rules that will apply to the proposed geolocation database. We support a database that is online, dynamic (updated frequently), easily accessible to users, governed by Commission requirements that prevent the database administrator(s) from closing off access to wireless microphone operators seeking channel protection, not subject to onerous fees or other burdensome requirements. Resolution of these issues will be critical in determining whether and to what extent the new geolocation/ database method

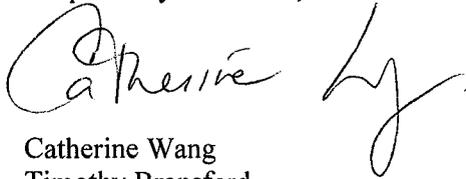
⁸ See "Shure Presentation: White Space Solutions" *attached to* Letter from Catherine Wang, Counsel to Shure Incorporated, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 04-186 (filed Sep. 25, 2008).

⁹ Shure Ex Parte letter from Catherine Wang to Marlene H. Dortch, Secretary FCC ET Docket No. 04-186 (filed Oct. 28, 2008).

Marlene H. Dortch, Secretary
October 31, 2008
Page 6

of protection -- which we understand is intended to be the principal method of interference protection at least until pure spectrum sensing devices are distributed -- will be effective in preventing interference to incumbents.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Catherine Wang". The signature is fluid and cursive, with a large initial "C" and a long, sweeping tail.

Catherine Wang
Timothy Bransford

Counsel for Shure Incorporated

cc: Mark Brunner (Shure Incorporated)
Ahren Hartman (Shure Incorporated)
Edgar Reihl (Shure Incorporated)