



November 14, 2019

Ex Parte

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

Re: 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, ET Docket No. 14-165 and RM-11840

Dear Ms. Dortch:

On May 3, 2019, Microsoft filed a Petition for Rulemaking requesting that the Commission issue a Further Notice of Proposed Rulemaking proposing a set of improvements to the TV White Spaces device (“WSD”) rules.¹ On October 7, Shure Incorporated filed a letter concerning this petition.² We write today to clarify the content and scope of Microsoft’s petition in response to Shure’s letter.

Operation in less-congested areas. As Shure recognizes, Microsoft has proposed higher power levels for WSDs only in less-congested areas. This change would be limited to radiated power levels, and would allow significant improvement in the economics of rural broadband coverage.³ Shure argues that the Commission should also limit other proposed rule changes to less-congested areas. As discussed thoroughly in comments filed in response to the Commission’s Public Notice seeking comment on the petition, however, such a limit is unnecessary to protect incumbent users and would needlessly undermine the use of the band at a time when the Commission is committed to spectral efficiency. This is the case because, even under revised rules, WSDs would still comply with channel and location availability restrictions as indicated by the White Spaces Database (“WSDB”). This will ensure that incumbent operations, including wireless microphones eligible to register in the WSDB, will be protected from harmful interference.⁴ On the other hand, such an unnecessary restriction would prevent many important use cases, even where there are no incumbent operations at all. The FCC should not, for example, arbitrarily limit the

¹ See Petition for Rulemaking of Microsoft Corporation, ET Docket No. 14-165, RM-11840 (filed May 3, 2019) (“Petition”).

² See Letter from Catherine Wang, Counsel to Shure, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 14-165, RM-11840 (filed Oct. 7, 2019) (“Shure Letter”).

³ See Petition at 4-5.

⁴ Reply Comments of Microsoft Corporation at 8, ET Docket No. 14-165, RM-11840 (filed June 25, 2019).

use of unused spectrum for important applications such as IoT in areas where no incumbent would be impacted just because the WSD is in a suburban area.

Operation on movable platforms. Shure may misunderstand Microsoft's proposed rule changes for WSDs operating on moving platforms. For example, Shure states that the proposal does not include "any geographic boundaries," and asks the Commission to apply the separation distance rules for fixed WSDs to moveable operations.⁵ But the rule changes Microsoft proposed in its petition already include these conditions. First, the geofenced areas are geographic boundaries, outside of which the WSD may not operate. Second, the separation distance rules applicable to fixed WSDs would be used to calculate those geographic boundaries for a given channel availability. Shure also mistakenly implies that the geofencing proposal for fixed WSDs would allow fixed devices to operate at much greater powers than would otherwise be allowed. To clarify, within the geofenced areas, all the rules for fixed WSDs would still apply. If the WSDB indicates that, for example, the maximum power for a fixed WSD on channel 23 at a given location is 150 mW, then that would be the maximum power for a fixed WSD on a moveable platform in a geofenced area that includes that location. (Or, if the power level of the fixed device exceeded that limit, the corresponding area would be excluded from the geofenced area.) And contrary to Shure's explanation, Microsoft proposes a method for ensuring that the fixed, transportable WSDs operating within the geofence will only operate within the geofence.⁶

Narrowband WSD emission mask. Shure's recent letter also, without technical justification, argues the Commission should apply a wireless microphone emissions mask to narrowband WSDs.⁷ Microsoft's petition includes a detailed discussion of how to ensure that the out-of-band emissions for narrowband operations would comply with the Commission's existing emissions limit of -42.8 dBm at 100 kHz beyond the edge of the applicable 6 MHz channel.⁸ This ensures that out-of-band-emissions ("OOBE") generated by narrowband devices outside of that channel would be identical to, or lower than, OOBE that might have been generated by any other WSD operating on the same 6 MHz channel and therefore provides robust protection for adjacent-channel licensees. Moreover, Shure's proposal is technically unsupportable and would be unnecessarily burdensome for narrowband WSDs because while the emissions mask Shure proposes was designed for devices transmitting in a 200 kHz bandwidth, narrowband WSDs would use channels of 100 kHz or less. Because roll-off is generally proportional to the bandwidth of the transmission, it would be especially difficult for WSDs to comply with this mask designed for much wider bandwidths.

It may be that Shure's unstated hope is that the Commission would adopt an emissions mask that protects *unlicensed* wireless microphones as opposed to *licensed*

⁵ Shure Letter at 2-3.

⁶ See Petition at 24-25 (explaining a 60-second location recheck interval and a requirement to cease operations within a certain distance of the geofence boundary).

⁷ Shure Letter at 3.

⁸ Petition at 17.

wireless microphones. Shure's proposed intra-6-megahertz mask is irrelevant to protecting licensed wireless microphones because they reserve full 6-megahertz channels in the WSDB. But to impose a restrictive mask on narrowband WSDs for the sole purpose of protecting unlicensed wireless microphones asks the FCC to upend previous decisions in this and many other bands, and protect one kind of unlicensed device from another type of unlicensed device. Unlicensed wireless microphones are not entitled to harmful interference protection from WSDs—or vice versa—and the Commission should not change that fundamental aspect of its unlicensed spectrum policy here.

Adjacent channel operations. Finally, Shure asks the Commission to “reject Microsoft’s proposal to allow more than 40 mW on adjacent channels.”⁹ But Microsoft’s petition does not ask the Commission to make a specific proposal regarding adjacent channel operations. Rather, the petition only asks the Commission to use an FNPRM to explore ways to maintain the current levels of protection for broadcast operations while using unused spectrum more effectively, by asking questions about the feasibility of allowing WSD operations at higher powers on adjacent channels.¹⁰ Shure provides no reasoned explanation to support its request that the Commission *not even ask questions* about the extremely important opportunity to unlock spectrum that is lying fallow today but that, with the right technical rules, could be used to expand access to high-speed internet for rural Americans.

Please do not hesitate to contact us should any questions arise.

Sincerely,

/s/ Paula Boyd

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⁹ Shure Letter at 3.

¹⁰ Petition at 6-7.