

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

In the Matter of)	
)	
Unlicensed Operation in the TV Broadcast Bands)	ET Docket No. 04-186
)	
)	
Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band)	ET Docket No. 02-380
)	

COMMENTS ON REPONSES TO PETITIONS FOR RECONSIDERATION

Shure Incorporated (“Shure”), by its undersigned counsel, provides these brief comments to the Oppositions and Responses filed in connection with Petitions for Reconsideration of the “white spaces” rules established in the Commission’s Second Memorandum Opinion and Order in the above-captioned docket (“Reconsideration Order”).¹ Shure limits these brief remarks to (1) the proposal of three parties² to relax the out-of-band emission (“OOBE”) limits of Section 15.709(c) as a means to save manufacturers from having to incur costs of developing unlicensed TV band device (“TVBD”) transmitters specifically designed for operation in the shared UHF and VHF channels, and (2) the proposal of the Wi-Fi Alliance to permit the operation of portable

¹ See *Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Second Memorandum Opinion and Order, ET Docket Nos. 04-186, 02-380 (Released Sept. 23, 2010) (“*Reconsideration Order*”).

² See *Petition for Reconsideration of Motorola Solutions, Inc.*, ET Docket No. 04-186, pp. 6-9 (Jan.5, 2011) (“*Motorola Petition*”); *Joint Petition for Partial Reconsideration of the Wireless Internet Service Providers Association, the Federation of Internet Solution Providers of the Americas, the Native American Broadband Association, Spectrum Bridge, Inc., Comsearch, Carlson Wireless Technologies Inc. and Wireless Strategies, Inc.* (“*Joint Petitioners*”), ET Docket No. 04-186, pp. 7-9 (Jan. 5, 2011) (“*Joint Petition*”); *Wi-Fi Alliance Petition for Reconsideration*, ET Docket No. 04-186, p. 4 (Dec. 30, 2010) (“*Wi-Fi Alliance Petition*”) (the Wi-Fi Alliance proposes to apply a fixed limit of -25.8 dBm/100 kHz if a device operates at a power of 100 mW or less).

devices in a quasi-fixed environment without geolocation capabilities along with fixed device operations on adjacent channels.³ No party offered data and analysis that would justify such changes and they should therefore be denied.⁴

Both proposals are presented as limited or minimal changes to the Commission's white spaces rules -- the need for which have become apparent as the industry moves toward the implementation stage of introducing white space TVBDs consistent with the Commission's expectations. As explained in Shure's Opposition, Shure strongly disagrees with the suggested rule changes because, if adopted, these changes would materially erode the protections established in the white spaces rules against interference to incumbent users generally, and wireless microphones in particular.

With respect to the proposed relaxation of the OOB limit, several other parties echoed Shure's view that the proposed changes would, in fact, materially undermine the interference protections put in place to ensure that new devices operating in the TV bands do not harm incumbent operations. Like Shure, MSTV/NAB also pointed out that the effort to relax the OOB limit is procedurally flawed.⁵ The Commission has already fully considered the appropriate OOB in the specific context of the multiple existing uses of the UHF and VHF TV bands and neither Motorola nor WISPA has offered any credible reason why the Commission should permit them to continue to dispute the limits. The proposals should be rejected in recognition of the long-held principle that the reconsideration process is not for the "purpose of

³ See *Wi-Fi Alliance Petition* at p. 4.

⁴ Shure also opposed the proposal of the Joint Petitioners to dramatically increase the permissible height of fixed unlicensed TV band antennas. See *Consolidated Opposition to Petitions for Reconsideration of Shure Incorporated*, ET Docket No. 04-186, pp. 13-14 (Feb. 24, 2011) ("*Shure Consolidated Opposition*").

⁵ See *Opposition to Petitions for Reconsideration of Association for Maximum Service Television, Inc. and National Association of Broadcasters*, ET Docket No. 04-186, pp. 3-8 (Feb. 24, 2011) ("*MSTV/NAB Opposition*").

allowing a petitioner to reargue matters already presented, considered, and disposed of by the Commission.”⁶

Further, the proposed changes are not “limited” or “minimal” amendments; they take direct aim at one of the chief methods of preventing TVBDs from interfering with incumbent services.⁷ Without the safeguard of adequate OOB limits to ensure that TVBD emissions do not bleed over into nearby channels, wireless microphones would be subject to extensive interference. For example, wireless microphone operations in the two locally designated reserve channels or operating on channels registered in the geolocation database will not be protected from interfering signals emanating from TVBDs operating on adjacent (or second or third adjacent) channels. Motorola’s proposed method of accounting for the weakened protection to users of adjacent spectrum is to adopt expanded distance separation requirements. MSTV/NAB point out that any relaxation of the OOB limit for *fixed* TVBDs will likely result in a relaxed standard showing up in *portable* devices and those devices would not be subject to the distance separation requirements suggested by Motorola.⁸

Even though Motorola and the WiFi Alliance both express confidence that the proposed changes to the OOB limit will not result in interference, both MSTV/NAB and Cellular South demonstrate that the proposed weakening of the OOB will cause interference to other services. MSTV/NAB questions the technical merit of the proposal and point out that “interference will occur wherever the Desired TV signal (D) is in less than -41 dBm (D=-33 -8).”⁹ With a relaxed

⁶ *In the Matter of Improving Public Safety Communications in the 800 MHz Band; Consolidating the 800 and 900 MHz Industrial/Land Transportation and Business Pool Channel*, Second Memorandum Opinion and Order, WT Docket No. 02-55, at ¶ 54 (Released May 30, 2007).

⁷ 47 C.F.R. § 1.429(b) (2011).

⁸ *See MSTV/NAB Opposition* at p. 8.

⁹ *Id.*

OOBE, according to MSTV/NAB, interference can be expected to occur in “the vast majority of a television station’s service area “causing substantial interference to the public’s free over-the-air, and primary television service.”¹⁰

Cellular South submits an engineering analysis demonstrating that the proposed dilution of the OOBE limits would result in interference to Lower Block A systems from TVBD operations in channel 51.¹¹ Cellular South shows that the proposed relaxation of the current OOBE limits would not only affect first adjacent channels, it also will possibly affect second adjacent and third adjacent channels. According to Cellular South, Motorola’s proposal to increase separation distance as a means to prevent inference does not cure the problem since Lower Block A systems are authorized throughout the United States.¹² In fact, neither Motorola nor WISPA offer any remedy for interference to Lower Block A systems.

Neither Motorola nor WISPA offers any remedy for interference to wireless microphones -- or even acknowledges that one is needed -- and the Commission should reject their proposals. Wireless microphone operations will certainly suffer under the proposed relaxed OOBE limit. This detrimental result would apply equally to both wireless microphones operating in the two locally designated reserve channels and those on channels registered in the geolocation database to secure protection for particular events and locations. “Pollution” emanating from TVBDs operating on adjacent (or second or third adjacent) channels under the proposed relaxed OOBE

¹⁰ MSTV/NAB *Opposition* at pp. 5, 8; see also *Opposition to Petitions for Reconsideration of Cellular South, Inc.*, ET Docket No. 04-186, pp. 4-7 (Feb. 25, 2011) (“*Cellular South Opposition*”).

¹¹ See *Cellular South Opposition* at Exhibit 1, p. 2 (“[b]ecause Lower 700 MHz Block A base stations may be located on CH 52 anywhere in the United States, the Motorola proposal (to increase separation distances) would be of no benefit to TVBD operation on CH 51 if Lower 700 MHz Block A facilities are provided protection equivalent to other TV band incumbents. If they are not provided that protection, the Motorola proposal would significantly increase destructive interference to those facilities”).

¹² See *Id.* at Exhibit 1, pp. 2-3 (“OOBE emissions attenuated only -47.8 dBr are strong enough to potentially impact 2nd and 3rd adjacent channels as well as 1st adjacent channels”).

limit would compromise the two major means of protecting wireless microphone operations that were carefully established in the Reconsideration Order through scientific data collection and analysis -- reserve channels and registration in the geolocation database -- and it should be prevented by maintaining the rules as they are currently written.

MSTV/NAB and Cellular South also challenge the justification given by the three petitioners seeking a relaxation of the OOB limit, namely that the standards must be relaxed so that manufacturers like Motorola will not need to incur costs to develop specific TVBD technology and instead will be able to use existing Wi-Fi technology for TV band operations. Motorola restates in its comments that “minimal changes [to the OOB rule] on a limited scope” need to be made because the OOB requirement “threatens the economic viability of TVBDs.”¹³ Both Motorola and WISPA maintain that costs will be higher but both fail to provide any substantiation of their claim. Their representations are inconsistent with the fact that Adaptrum - - a new company with presumably nowhere near the resources of a large, well-established company like Motorola -- has confirmed to the Commission that it is in fact able to move forward with TVBDs designed under the current OOB limit.¹⁴

Like Shure, MSTV/NAB and Cellular South challenge the apparent assumption of Motorola, WISPA and some parties who offered their support,¹⁵ that the Commission’s rules and the extent to which incumbent services must suffer interference should turn on a manufacturer’s commercial desire to sell off-the-shelf, possibly outdated technology not

¹³ *Comments of Motorola Solutions, Inc. to Petitions for Reconsideration*, ET Docket No. 04-186, p. 4 (Feb. 24, 2011) (“*Motorola Petition Comments*”).

¹⁴ *See Ex Parte Presentation of Adaptrum Inc.*, ET Docket No. 04-186, p. 2 (Jan. 4, 2011) (noting that its existing equipment “meets and exceeds the mask requirement specified in the current rules while tuning over all UHF TV channels between 400 and 1000 MHz.”)

¹⁵ *See, e.g., Motorola Petition* at p. 3 (asserting that the present OOB will “preclude the use of existing, off-the-shelf” technology).

designed for use in spectrum that is shared with multiple other services.¹⁶ Google and PISC offered support for Motorola's and WISPA's request to relax the OOB limit based on anticipated lower costs, but neither party offers any data or analysis of the projected costs or impact on interference protection. In fact, PISC candidly admits that it has no means to verify the engineering and cost data¹⁷ submitted by Motorola and WISPA.¹⁸

In short, it is clear that no party has offered adequate justification to disrupt the careful balance established after years of examination by the public and the Commission concerning how best to balance the desire to introduce new services in shared spectrum under carefully crafted rules designed to ensure that existing services will not experience interference. The proposed rule changes essentially ask the Commission to compromise and dramatically skew the public interest toward one side of the equation without a compelling analysis, and therefore the request of Motorola and WISPA should be denied.

II. Wi-Fi Alliance's Proposal to Permit Operation of Fixed Devices on Adjacent Channels Will Cause Interference to Wireless Microphone Operations

MSTV/NAB shared Shure's strong concerns regarding the Wi-Fi Alliance request that the Commission create a new class of TVBDs that encompass "quasi-fixed" consumer devices and permit them to operate on adjacent channels without geolocation capability and compliance

¹⁶ See *MSTV/NAB Petition* at p. 2 (public interest in protecting consumers' television should not be compromised by desire to reduce a manufacturer's costs) MSTV/NAB state that the Petitioners have not presented a justification to change the OOB limits and disrupt the careful balance established by the Commission other than that the "changes would tilt the balance in their direction." In assessing Motorola's claims, Cellular South's engineering expert reflects that "very little effort has been made in the design and testing of TVBDs." *Cellular South Opposition* at Exhibit 1, p. 2.

¹⁷ See *Opposition and Response to Petitions for Reconsideration of Public Interest Spectrum Coalition*, ET Docket No. 04-186, at p. 11 (Feb. 24, 2011) ("*PISC Opposition*") ("PISC has no means to verify the engineering and cost data submitted by" Motorola and WISPA).

¹⁸ See *Joint Petition* at pp. 7-9; *Motorola Petition* at pp. 3-7.

with other requirements that pertain to portable devices. The mass marketed indoor consumer devices the Wi-Fi Alliance describes do not meet the Commission’s definition of “fixed device” because they would be expected to be moved from one location to another at will by the user. As such, they should be classified as “portable devices” and should meet those requirements. The Commission’s rules provide sufficient flexibility for devices to operate as Mode 1 or Mode 2 devices, depending on whether or not they have geolocation capability and Internet access capability. There is no justifiable reason to create a new class of vaguely defined devices outside of the current scheme of requirements. Like Shure, MSTV/NAB also opposed the WiFi Alliance’s proposal to permit fixed devices on adjacent channels.¹⁹ As outlined in Shure’s Opposition, the prohibition on fixed operations in adjacent channels is critical to protecting television and wireless microphone operations.²⁰

Shure Incorporated (“Shure”) respects the careful balance struck by the Commission in its Second Memorandum Opinion and Order (“Order”), released on September 23, 2010, and strongly opposes the effort by petitioners to undo this work.

¹⁹ See *MSTV/NAB Opposition* at pp. 8-9.

²⁰ See *Shure Consolidated Opposition* at pp. 12-13.

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CERTIFICATE OF SERVICE

I, Tim Bransford, hereby certify that on March 7, 2011, I have caused a copy of the Comments on Responses to Petitions for Reconsideration of Shure Incorporated to be served via U.S. mail on the following:

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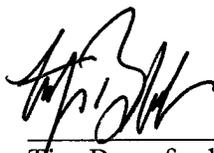
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