

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Spectrum Bridge, Inc. and Meld Technologies,)	ET Docket No. 13-81
Inc. Request For Waiver Of Sections 15.711(b)(2))	
and 15.711(b)(3)(ii) of the Rules)	
)	

ORDER

Adopted: September 16, 2013

Released: September 16, 2013

By the Chief, Office of Engineering and Technology:

I. INTRODUCTION

1. By this action, we grant a waiver of the restriction on adjacent channel operation for a fixed TV bands device (TVBD) manufactured by Meld Technologies, Inc. (“MeldTech”).¹ We find that granting this waiver would serve the public interest by increasing the potential opportunities for innovative use of the TV white spaces while satisfying the rules’ underlying purpose of providing protection for incumbent operations.

II. BACKGROUND

2. Part 15 of the Commission’s rules permits the operation of low power radio frequency devices without an individual license from the Commission. The technical and operating requirements contained in Part 15 are designed to ensure that unlicensed devices are unlikely to cause harmful interference to authorized users of the radio spectrum. Subpart H of Part 15 permits TVBDs to operate on TV channels that are not in use by authorized services or certain protected operations at a particular location.

3. The Part 15 rules allow two general categories of TVBDs: fixed and personal/portable.² Fixed devices must incorporate a geo-location capability and a means to access a database that provides a list of available TV channels at their location. As an alternative to incorporating a geo-location capability, fixed devices may have their geographic coordinates determined and programmed by a professional installer.³ Fixed devices must contact a database to obtain a channel list before operating and re-check the database at least once daily.⁴ They are permitted to operate with up to one watt transmitter output power and may use an antenna that provides up to 6 dBi of gain, which yields a maximum of 4 watts EIRP.⁵ Personal/portable devices are permitted to operate with up to 100 mW EIRP except when operating within the service contour

¹ *Spectrum Bridge Inc. Request for Temporary Waiver of Part 15 Rules for MeldTech Fixed TVWS Device (Amended)*, filed February 13, 2013, ET Docket No. 13-81.

² See 47 C.F.R. §§ 15.703(c) and 15.703(i).

³ See 47 C.F.R. § 15.711(b)(1).

⁴ See 47 C.F.R. § 15.711(b)(3)(i).

⁵ See 47 C.F.R. § 15.709(a).

of an adjacent channel TV station, in which case they may operate with up to 40 mW EIRP.⁶ They must either contact a database to obtain a list of available channels or operate under the control of another TVBD that obtains a list of available channels from a database. Fixed TVBDs may operate on channels 2-51 (except channels 3, 4 and 37), while personal/portable devices may operate only on channels 21-51 (except channel 37). The channels that are available for fixed and personal/portable devices generally differ at a given location because, for example, only fixed devices may operate below channel 21 and only personal/portable devices with a power level of 40 mW or less may operate within the service contour of adjacent channel TV stations.

4. Operators of cable headends and TV translator receive sites as well as certain wireless microphone users may register their locations in the database to protect their operations from TVBDs. With respect to wireless microphones, licensees and venues in which large numbers of unlicensed wireless microphones are used may register channels in the TV bands database.⁷ Such registered channels may not be used by nearby TVBDs at the designated times they are used by wireless microphones.⁸

5. MeldTech currently holds an equipment certification for a fixed TVBD.⁹ This device is approved to operate with a maximum transmitter power level of 14 mW and a maximum antenna gain of 2 dBi, which produces an EIRP of 22 mW. The device does not incorporate a geo-location capability and therefore requires professional installation. Spectrum Bridge, Inc. (“Spectrum Bridge”), one of the TV bands database administrators, filed a request on behalf of MeldTech asking that the Commission waive the restriction on adjacent channel operation for devices to be manufactured and installed by MeldTech. Specifically, Spectrum Bridge asks for waiver of Sections 15.711(b)(2) and 15.711(b)(3)(ii) of the rules to allow the MeldTech fixed device to be treated as a professionally installed personal/portable device so that it can operate on channels that are indicated in a TV bands database as being available for use by personal/portable TVBDs operating at 40 mW. It states that the device otherwise meets the rules for personal/portable operation as it operates only on channels 21 and above with a power level not to exceed 40 mW EIRP. The device would stream video content to digital television receivers in commercial locations such as “big box” stores and would not be sold to consumers or through consumer retail outlets. It states that the device would contact the Spectrum Bridge database at least once every 30 minutes to confirm that the channels assigned by the database continue to be available and to avoid causing interference to licensed operations and protected receivers.

6. Spectrum Bridge states that because the device would be used indoors, adding GPS to the device would not provide a practical or reliable way to determine its location. Spectrum Bridge requests a waiver for a period of one year to permit the marketing, manufacture and installation of the subject equipment while other, more reliable geo-location solutions are developed for the environments in which the device is intended to operate. It argues that the waiver would serve the public interest by increasing the potential opportunities for innovative use of the TV white spaces while satisfying the requirement to provide protection for incumbent operations. In particular, Spectrum Bridge notes that in many urban areas the availability of channels for fixed TVBD use is extremely limited.¹⁰

7. The Office of Engineering and Technology released a Public Notice on March 25, 2013 seeking

⁶ See 47 C.F.R. § 15.709(a)(2).

⁷ See 47 C.F.R. § 15.713(h)(8) and (9).

⁸ See 47 C.F.R. § 15.712(f)(1).

⁹ FCC ID: OKVMT300.

¹⁰ See waiver request at 2.

comment on the waiver request.¹¹ Six parties filed comments and one party filed reply comments in response to the Public Notice.¹² Three parties, James E. Whedbee, West Pond Enterprises and VimiONix support the waiver request.¹³ VimiONix requests that the Commission ensure that devices operating under the waiver provide protection to incumbent services that equals or exceeds the protection provided by 40 mW personal/portable devices, and that devices operating under the waiver incorporate a mechanism to confirm their geographic coordinates.¹⁴

8. Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) opposes the waiver, arguing that it is inappropriate for Spectrum Bridge to file the request since the database administrator is responsible for ensuring that devices operate in accordance with the rules, and because there is no evidence that Spectrum Bridge has authority to act on behalf of MeldTech.¹⁵ EIBASS further argues that the MeldTech devices would cause adjacent channel interference to mobile DTV receivers located within the same building as the MeldTech device, that the waiver request does not indicate that operation would be limited to big box stores, and that users may be able to enter incorrect coordinates to get the device to function at locations where operation is prohibited.¹⁶

9. NAB supports the grant of the waiver with conditions. Specifically, it contends that any waiver grant should provide for the following: 1) devices must be professionally installed on a fixed mounted rack, only used within a commercial or business establishment, and not be offered for sale to the general public, 2) devices must be limited to a maximum of 40 mW EIRP, 3) devices must be required to contact the Spectrum Bridge database at least once every 30 minutes, and 4) the waiver is limited to one year.¹⁷

10. Shure recommends against grant of the waiver, but states that the Commission should impose a number of conditions if it chooses to grant the waiver.¹⁸ Specifically, Shure requests that: 1) MeldTech and Spectrum Bridge each be required to specify the name of the designated person with 24-hour contact information and make this information publicly available and include it on the devices, 2) MeldTech be required to specify the measures it will adopt to prevent sales to the general public, 3) MeldTech and Spectrum Bridge be required to implement a process to monitor the distribution, placement and operation of the devices and maintain a public record of that information, 4) MeldTech devices be required to be installed in such a way that the power supply can be easily disconnected by third parties since there is no power switch, 5) MeldTech and Spectrum Bridge be required to advise the FCC of any incidences of interference, 6) MeldTech devices not be allowed to operate after the expiration of a 12-month waiver and must be recovered by MeldTech for modification or replacement with compliant devices, 7) MeldTech devices be required to be labeled with a statement that operation is prohibited after a certain date, and 8) the manufacture and sale of any new noncompliant devices be prohibited after the expiration of the waiver.

¹¹ See *Office of Engineering and Technology Declares the Spectrum Bridge, Inc. and Meld Technologies, Inc. Request for Waiver of Sections 15.711(b)(2) and 15.711(b)(3)(ii) of the Rules to be a "Permit-but-Disclose" Proceeding for Ex Parte Purposes and Requests Comment, Public Notice*, 28 FCC Rcd 3241 (OET, 2013).

¹² Comments were filed by James E. Whedbee, Steve Hastings (West Pond Enterprises), EIBASS, National Association of Broadcasters (NAB), Shure Incorporated, and VimiONix LLC. Spectrum Bridge & Meld Technology filed joint reply comments.

¹³ See James E. Whedbee comments at 1, West Pond Enterprises comments at 1 and VimiONix comments at 1.

¹⁴ See VimiONix comments at 2-3.

¹⁵ See EIBASS comments at 1.

¹⁶ See EIBASS comments at 2 and 6.

¹⁷ See NAB comments at 3.

¹⁸ See Shure comments at 3-5.

III. DISCUSSION

11. Spectrum Bridge's petition requests that we allow a particular fixed TVBD to operate on channels adjacent to occupied TV channels. Specifically, it requests a waiver of Sections 15.711(b)(2) and 15.711(b)(3)(ii) of the rules to allow the MeldTech fixed TVBD to be treated as a professionally installed personal/portable device, which would permit it to operate on channels adjacent to occupied TV channels at a power level of no more than 40 mW. However, since the MeldTech TVBD is already certified as a fixed device and operates with a power level of less than 40 mW, we believe that Spectrum Bridge's request to allow adjacent channel operation by this device would be more appropriately considered a request to waive Section 15.712(a)(2). This section requires all fixed TVBDs to operate at certain minimum separation distances outside the protected contours of both co-channel and adjacent channel TV stations. Accordingly, we are treating Spectrum Bridge's petition as a request to waive Section 15.712(a).

12. We are authorized to grant a waiver under Section 1.3 of the Commission's rules if the petitioner demonstrates good cause for such action.¹⁹ Good cause, in turn, may be found and a waiver granted "where particular facts would make strict compliance inconsistent with the public interest."²⁰ To satisfy this public interest requirement, the waiver cannot undermine the purposes of the rule, and there must be a stronger public interest benefit in granting the waiver than in applying the rule.²¹ The prohibition on adjacent channel operation by fixed TVBDs in Sections 15.712(a)(2) of the rules exists to ensure that fixed devices, which may operate at up to 4 watts EIRP, do not interfere with broadcast TV reception. Personal/portable devices that operate at 40 mW or less are not prohibited from operating on channels adjacent to those identified in the database. As discussed below, a fixed device operating at or below 40 mW has no greater potential to cause harmful interference to authorized services and protected users than does a mobile device operating at or below 40 mW. Hence, granting this waiver will not undermine the purpose of the rules. Finally, there is a strong public interest benefit in granting this waiver because it would provide for new innovative services to the public. Accordingly, we find good cause exists for granting a waiver of Sections 15.712(a)(2) for the MeldTech device.

13. We find that grant of the requested waiver will not cause harm to authorized services in the TV bands or to other operations that TVBDs must protect and thereby not contravene the interference protection element of the rules. Because the MeldTech device will operate with a power level not to exceed 40 mW EIRP, it has no greater potential for causing interference to adjacent channel broadcast television, wireless microphones or other authorized services than personal/portable devices operating at that same power level. The TV bands database will ensure that the device complies with the minimum required separation distances from co-channel broadcast TV stations, registered wireless microphones and all other TV band operations that must be protected. Further, operation of this device will be subject to the Part 15 requirements that it may not cause harmful interference to authorized services and that it must cease operation in the event

¹⁹ 47 C.F.R. § 1.3. See also *ICO Global Communications (Holdings) Limited v. FCC*, 428 F.3d 264 (D.C. Cir. 2005); *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

²⁰ *Northeast Cellular*, *supra* at 1166; see also *ICO Global Communications*, *supra* at 269 (quoting *Northeast Cellular*); *WAIT Radio*, *supra* at 1157-59.

²¹ See, e.g., *WAIT Radio*, *supra* at 1157 (stating that even though the overall objectives of a general rule have been adjudged to be in the public interest, it is possible that application of the rule to a specific case may not serve the public interest if an applicant's proposal does not undermine the public interest policy served by the rule); *Northeast Cellular*, *supra* at 1166 (stating that in granting a waiver, an agency must explain why deviation from the general rule better serves the public interest than would strict adherence to the rule).

interference occurs.²² Therefore, grant of a waiver of Sections 15.712(a)(2) will not undermine the purpose of these rules.

14. We also believe that, based upon Spectrum Bridge's representations, grant of the requested waiver is in the public interest by providing increased opportunities for innovative use of the TV white spaces. As Spectrum Bridge describes, the MeldTech devices will offer commercial entities cost-effective digital signage capabilities, such as the ability to display product and sales information in a retail environment. Grant of the requested waiver will permit the introduction of new wireless technologies that have benefits for the public, whereas application of the existing rule would deny these public benefits.

15. We disagree with EIBASS's assertion that the requested waiver should not be granted. We find it appropriate for Spectrum Bridge to file this waiver request because modifications to the TV bands database are necessary to enable a fixed TVBD to operate on a channel adjacent to an occupied TV channel.²³ MeldTech will continue to be responsible for the compliance of its certified device, and Spectrum Bridge is responsible for ensuring that its database provides the correct list of available channels to the MeldTech devices covered by the waiver as well as to all other TVBDs not covered by the waiver.²⁴ We also disagree with EIBASS's contention that the MeldTech devices would cause adjacent channel interference to mobile DTV receivers within a building, even at a 40 mW power level. As discussed above, the MeldTech device operating at 40 mW would have no greater potential to interfere with adjacent channel DTV reception than personal/portable devices operating at the same power level, and we expect the interference potential to be less since the MeldTech devices are certified for a maximum of 22 mW EIRP and will be operating at fixed locations. With regard to EIBASS' concerns about the locations where the devices can be used and the ability of users to modify coordinates, we are limiting operation to within commercial and business establishments, *i.e.*, indoors, and prohibiting users from being able to change the geographic coordinates as discussed above.

16. Accordingly, we are granting the requested waiver subject to the following conditions:

- 1) This waiver applies to MeldTech devices authorized under FCC ID OKVMT300.
- 2) The MeldTech devices must be professionally installed on a fixed mounted rack, and the geographic coordinates must not be changeable by the user.
- 3) The MeldTech devices may only be used indoors within retail stores and not offered for sale to the general public.²⁵
- 4) The MeldTech devices must contact the Spectrum Bridge database at least once every 30 minutes to obtain an updated list of available channels.
- 5) The manufacture, marketing, and installation of devices certified under FCC ID OKVMT300 for operation under the terms of this waiver is valid for a period of one year from the date of this Order to provide MeldTech an opportunity to develop new geo-location technologies for indoor personal/portable TVBDs that will eliminate the need for a waiver. Continued operation of devices installed during this one-year period is permissible in accordance with the terms of this

²² See 47 C.F.R. § 15.5.

²³ See joint Spectrum Bridge and MeldTech reply comments at 2.

²⁴ A fixed TVBD must send its FCC ID and serial number to the TV bands database. See 47 C.F.R. § 15.713(f). This information can be used by the database to identify the devices covered by this waiver.

²⁵ We do not have a definition of "big box store," and Spectrum Bridge did not provide one. We are therefore limiting operation of MeldTech devices under this waiver to indoor uses at retail stores, which we believe is consistent with Spectrum Bridge's request.

wavier after the end of the one-year period.²⁶

17. We decline to add additional conditions to the grant of the waiver as requested by Shure, because we believe conditions beyond those we imposing are not necessary. As discussed above, we are requiring the MeldTech devices to be professionally installed with the geographic coordinates set by the installer and not changeable by the user, limiting their use to within commercial or business establishments, and not permitting sales to the general public. We believe that these conditions address many of Shure's concerns. In any event, we believe that there is a low probability the MeldTech devices will cause interference to wireless microphones because they will operate at low power levels and be used in indoor commercial locations such as big box stores where they are unlikely to be in close proximity to wireless microphones. Further, we are not waiving the 1-kilometer minimum separation distance from registered wireless microphone locations that was established to provide protection from 4-watt fixed TVBD devices. Thus, we believe it unlikely that the lower powered MeldTech devices will cause interference to wireless microphones. We therefore decline to require Spectrum Bridge and MeldTech to provide 24-hour contact information or make public a list of all locations where the MeldTech device is used. Such actions are not required for other TVBDs, and we similarly believe they are not appropriate here.

18. In addition, since our rules already require operators of Part 15 equipment to cease operation in the event that harmful interference occurs, we see no need to require MeldTech to incorporate a specific means in their device such as a power supply disconnection to perform this action. We also see no need to require MeldTech to recall its devices at the end of one year as Shure requests since the devices are already certified and comply with the rules. The waiver permitting adjacent channel operation will be accomplished by Spectrum Bridge modifying its database to provide channel lists to the MeldTech devices that include adjacent channels. Further, as discussed above, we will permit continued operation of MeldTech devices installed under the waiver after a period of one year, but will not permit new installations after that time.

IV. ORDERING CLAUSE

19. Accordingly, pursuant to authority in Section 0.31, 0.241 and 1.3 of the Commission's rules, 47 C.F.R. sections 0.31, 0.241 and 1.3, and Sections 4(i), 302, 303(e), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 302, 303(e), and 303(r), IT IS ORDERED that the request for waiver of Sections 15.711(b)(2) and 15.711(b)(3)(ii) of the rules filed by Spectrum Bridge on behalf of MeldTech IS GRANTED, subject to the conditions listed above. This action is effective upon release of this Order.

FEDERAL COMMUNICATIONS COMMISSION

Julius P. Knapp
Chief, Office of Engineering and Technology

²⁶ MeldTech must file a permissive change application for equipment authorization according to § 2.1043 of the Commission's rules. *See* 47 C.F.R. § 2.1043. The filings must clearly demonstrate compliance with all the conditions and include a reference to the waiver. Any changes to the equipment permitted under permissive change rules are permitted during the one year period. New devices installed after the expiration of this waiver must operate in accordance with the rules in effect at that time and will need to be certified appropriately. However, we will allow the replacement and registration of a new device installed to replace an existing device operating pursuant to this waiver (*e.g.*, due to an equipment malfunction) so long as it is installed at the same exact location as the device it is replacing. Any permissive changes to the equipment after the one year period will be approved in accordance with the rules in effect at that time.