

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Use of Spectrum Bands Above 24 GHz for Mobile Radio Services)	GN Docket No. 14-177
)	
Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band)	RM-11664
)	

REPLY COMMENTS OF XO COMMUNICATIONS, LLC

XO Communications, LLC (“XO”) hereby replies to comments on the Notice of Inquiry (“NOI”) exploring the development of 5G services in spectrum bands above 24 GHz (the “upper microwave bands”).¹ Like XO, numerous commenters urge the Federal Communications Commission (“Commission” or “FCC”) to adopt an appropriate regulatory framework that will enable new 5G mobile technologies to thrive above 24 GHz while protecting prior deployments in these bands.² The Commission should expeditiously initiate a rulemaking to realize this goal, while rejecting suggestions that it limit 5G operations in the upper microwave bands, clear existing licensees from their spectrum, or permit unlicensed or shared use in spectrum bands with existing users.

¹ *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services; Amendment of the Commission’s Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands; Implementation of Section 309(j) of the Communications Act – Competitive Bidding, 37.0-38.6 GHz and 38.6-40.0 GHz Bands; Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band*, Notice of Inquiry, 29 FCC Rcd 13020 (2014) (“NOI”).

² Comments of XO Communications, LLC, GN Docket No. 14-177 (Jan. 15, 2014) (“XO Comments”) (unless otherwise noted, all comments cited herein were filed in GN Docket No. 14-177 on January 15, 2014).

I. SEVERAL KEY POSITIONS ON 5G SERVICES ABOVE 24 GHz ARE SUPPORTED BY A NEAR CONSENSUS OF COMMENTERS

In response to the *NOI*, a near consensus of parties supports several key positions taken by XO in its comments. Nearly all commenters recognize the feasibility of providing 5G services in the upper microwave bands, including in the Local Multipoint Distribution Service (“LMDS”) and 39 GHz bands.³ As parties point out, the technical viability of 5G mobile operations above 24 GHz has been confirmed by experimental testing. Numerous parties also recognize that 5G mobile services are capable of coexisting with existing deployments in spectrum above 24 GHz. For instance, Samsung notes that it “has studied [the LMDS band] for 5G and submits that new 5G mobile services would be compatible with existing uses,”⁴ while Intel outlines a variety of factors that could be used to “decrease the overall amount of interference radiated by the 5G system into an incumbent system” in order to “protect incumbent services from harmful interference in bands above 24 GHz.”⁵ Most commenters also support XO’s request that the Commission provide flexibility for upper microwave licensees to utilize time-division duplexing (“TDD”) technology for their 5G operations.⁶ As parties point out, TDD will allow 5G operators above 24 GHz to use their spectrum more efficiently, since these

³ See, e.g., Comments of Motorola Mobility LLC at 7 (noting that “the 27.5-28.35 portion of the LMDS band” and “the 39 GHz Band . . . each warrants further attention from the Commission”); Comments of Samsung Electronics America, Inc. and Samsung Research America at 1 (“Samsung Comments”) (urging the Commission to “focus primarily on the provision of licensed mobile broadband systems in the 28 GHz and 39 GHz LMDS bands . . . for 5G”).

⁴ Samsung Comments at 41

⁵ Comments of Intel Corporation at 36. See also Comments of Ericsson Inc. at 34 (“Ericsson Comments”); Comments of QUALCOMM Incorporated at 14 (“Qualcomm Comments”); Comments of Straight Path Communications, Inc. at 15 (“Straight Path”).

⁶ E.g., Comments of Bluwan SA, GN Docket No. 14-177, at 13 (Dec. 16, 2014); Comments of Nokia at 14 (“Nokia Comments”); Samsung Comments at 31; Comments of Verizon at 5.

providers will not be able to rely on large, contiguous blocks of spectrum. Finally, a wide variety of parties also agree that promoting global harmonization of the upper microwave bands for 5G purposes would create beneficial economies of scale.⁷ XO reiterates its support for all of these positions.

II. THE COMMISSION SHOULD ENABLE EXISTING LICENSEES IN THE LMDS AND 39 GHz BANDS TO PROVIDE 5G MOBILE SERVICES, WHILE REJECTING CALLS FOR BAND CLEARING OR SHARED SPECTRUM USE

Numerous commenters agree that the best regulatory approach for realizing a rapid, efficient 5G deployment is to permit XO and other upper microwave band licensees to operate 5G facilities on a co-primary basis under the existing geographic area licensing framework in the LMDS and 39 GHz bands.⁸ Existing licensees such as XO have substantial experience and expertise in these spectrum bands and will be able to implement 5G in a fashion that enables those systems to co-exist with incumbent backhaul and other current deployments.⁹ On this issue, T-Mobile notes that existing licensees are “poised to make beneficial use of the spectrum in a quick time period” and should be permitted to “seamlessly and easily begin mobile uses.”¹⁰

⁷ See, e.g. Comments of the Consumer Electronics Association at 11 (noting that “[i]nternational harmonization is crucial to enabling the most efficient deployment of next generation technology”); Comments of EchoStar Satellite Operating Corporation, Hughes Network Systems, LLC, and Alta Wireless, Inc. at 15 (“EchoStar Comments”) (“Harmonization allows operators to take advantage of economies of scale and other efficiencies, which reduce service costs and benefit users of the service.”); Ericsson Comments at 35 (“Global harmonization will limit the number of models of equipment required to be developed, making each cheaper and more affordable for operators to deploy.”).

⁸ See, e.g., EchoStar Comments at 2 (urging the FCC to “create a regulatory regime that allows for future expansion and flexibility for existing licensees to utilize their spectrum in a more efficient manner”); Comments of FiberTower Spectrum Holdings, LLC at 16-17 (advocating for the Commission to “permit incumbent licensees to provide mobile services pursuant to their existing geographic licenses using as guidance the same border interference and coordination standards that are currently in place”).

⁹ See, e.g., XO Comments at 4.

¹⁰ Comments of T-Mobile USA, Inc. at 7 (“T-Mobile Comments”).

Similarly, NYU Wireless advocates in favor of “flexible, permissive licensing with minimal restrictions on incumbent spectrum holders, so that they may rapidly and aggressively work with other constituents to implement new services and business models that may be mobile, fixed, or low-pedestrian in nature.”¹¹ With respect to any unassigned spectrum in the upper microwave bands, XO again urges the Commission to assign such spectrum under the existing licensing schemes in each band. Similarly, T-Mobile asks the Commission to extend the existing licensing framework there “by licensing vacant spectrum by auctioning exclusive rights to geographic service areas,”¹² while Straight Path warns the Commission to avoid causing unnecessary complexity by “[a]llocating licenses using smaller geographic areas” than are currently used.¹³

The Commission should dismiss suggestions from some commenters that it should limit 5G operations in the upper microwave bands, clear existing licensees from their spectrum and repurpose it for exclusive mobile use, or permit shared and unlicensed 5G use of these spectrum bands. First, contrary to some claims,¹⁴ restrictions on 5G operations (such as a secondary allocation) are not necessary to protect wireless backhaul and other current systems from interference. As indicated above, these systems can successfully coexist above 24 GHz. Meanwhile, the Commission should definitively reject any arguments in favor of clearing and re-auctioning the LMDS and 39 GHz bands.¹⁵ As described in its comments, XO is actively utilizing its spectrum assets throughout the United States to provide fixed wireless customers with last mile access, cell tower backhaul, and small cell backhaul services, and is today

¹¹ Comments of NYU Wireless at 6.

¹² T-Mobile Comments at 6.

¹³ Straight Path Comments at 25.

¹⁴ *See, e.g.*, Comments of Avanti Communications Group PLC at 2; Comments of Vivint Wireless, Inc. at 2-4.

¹⁵ *E.g.*, Nokia Comments at 32; Qualcomm Comments at 8, 17; Samsung Comments at 38.

exploring the deployment of next-generation mesh backhaul facilities. A decision now to clear these bands would undercut licensees' long-term efforts to develop this spectrum and would cause significant harm to their customers.¹⁶

The Commission should also reject calls for the provision of 5G on a shared or unlicensed basis in the LMDS and 39 GHz bands.¹⁷ Allowing such shared or unlicensed use in these exclusively licensed bands would create a significant interference risk both to existing services and new 5G services. Straight Path notes that unlicensed and shared operations are best suited to “bands where there is little risk of disrupting the operations of existing licensees” rather than in the LMDS or 39 GHz bands where existing operations could be diminished.¹⁸ An unlicensed approach would also jeopardize 5G investment above 24 GHz; as Samsung recognizes, “a purely unlicensed, non-exclusive framework for mobile operations may result in less investment in 5G network deployment because of the uncertainty of parties about their prospects for obtaining a return on their investment.”¹⁹ Rather than rely on unlicensed use, the Commission should focus on integrating 5G services into the existing licensing frameworks in these bands, thereby maximizing 5G's enormous potential.²⁰

¹⁶ Certainly, if the Commission creates 5G mobile “carve-outs” in the existing upper microwave bands, it should simultaneously make additional lower-frequency spectrum available for the existing licensees' fixed point-to-point and point-to-multipoint operations. *See* XO Comments at 8.

¹⁷ *See, e.g.*, Comments of Google Inc. at 7; Comments of National Cable & Telecommunications Association at 6 (favoring secondary unlicensed operations in bands allocated to licensed mobile services).

¹⁸ *See* Straight Path Comments at 26-27.

¹⁹ Samsung Comments at 37.

²⁰ Similarly, the Commission should deny the proposal from several satellite operators that fixed satellite service (“FSS”) be upgraded to co-primary status in the LMDS band. *See, e.g.*, EchoStar Comments at 24 (asking the Commission to “examine whether to change the current secondary allocations for satellite uplinks for gateway stations in the LMDS band to a co-primary allocation . . . to ensure that such stations can continue to operate and expand when

III. CONCLUSION

For the foregoing reasons, XO again urges the Commission to promote the development and deployment of 5G mobile services in spectrum bands above 24 GHz while protecting existing services in these bands. In so doing, the Commission should not limit 5G operations, clear existing licensees from their spectrum, or permit unlicensed or shared use in spectrum bands that have existing users.

Respectfully submitted,

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5G services also are authorized in these bands”); Comments of SES Americom, Inc., Intelsat Corporation, O3b Networks USA LLC, and Inmarsat, Inc. at 1-2 (urging the Commission to “consider according protected, co-primary status for certain types of FSS earth stations” to eliminate “the uncertainty of being secondary to potential future terrestrial systems” and enable “more intensive use of the lower LMDS band”). This modification could encumber existing LMDS licensees’ spectrum and potentially frustrate their efforts to build out fixed wireless and 5G systems. In addition, there is already ample satellite-allocated spectrum available to FSS operators, including in the C, Ku, and Ka bands.