

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

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| In the Matter of |) | |
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| Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz |) | GN Docket No. 17-183 |
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| Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rule to Authorize and Facilitate the Deployment of Licensed Point-to-Point Multipoint Fixed Wireless Broadband Service in the 3700-4200 Band |) | RM-11791 |
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COMMENTS OF CHARTER COMMUNICATIONS, INC.

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October 2, 2017

I. INTRODUCTION AND SUMMARY

Charter Communications, Inc. (“Charter”) files these comments in response to the Federal Communications Commission’s (“Commission”) Notice of Inquiry seeking comment on potential opportunities for additional flexible use of wireless broadband services in spectrum bands between 3.7 GHz and 24 GHz (“mid-band spectrum”).¹ Charter welcomes the Commission’s continued efforts to explore additional spectrum bands for wireless broadband services. The availability of additional frequencies will enhance the ability of new wireless entrants to deploy 5G wireless technology and develop innovative wireless services for consumers across the country.

Charter is actively exploring the use of mid-band and high-band spectrum to deliver fixed and mobile wireless service to its subscribers, working with its vendors to conduct 5G and 4G LTE trials examining the use of wireless technologies in both indoor and outdoor locations.² These trials are providing critical information as Charter prepares to launch a mobile wireless service next year and bring new competition to that marketplace. Charter will emphasize an “Inside-Out” strategy, focusing first on wireless solutions inside the home and office, and then eventually expanding outdoors. Already, Charter provides wireless connectivity with over two hundred million wireless devices attached to its network, carrying as much as 80 percent of wireless traffic in the home and office.

The availability of additional mid-band spectrum can help advance these efforts. As the Commission formulates future policy for this spectrum, however, it should take appropriate steps to protect incumbent users. Charter, for instance, has more than 700 receive earth stations in the

¹ See *Expanding Flexible Use of Mid-Band Spectrum Between 3.7 and 24 GHz*, GN Docket No. 17-183, FCC 17-104, Notice of Inquiry, 32 FCC Rcd 6373 (2017).

² *Harnessing 5G to drive the innovations of the future*, CHARTER COMMUNICATIONS, INC. BLOG (Sept. 12, 2017), <http://policy.charter.com/blog/harnessing-5g-drive-innovations-future/>.

3.7-4.2 GHz band (“3.7 GHz band”). These incumbent operations are crucial to Charter’s core video business. In addition, Charter maintains several Cable Television Relay Service (“CARS”) and microwave licenses in the 5.925-6.425 GHz and the 6.425-7.125 GHz bands (collectively, the “6 GHz band”).

Charter therefore agrees with NCTA–The Internet and Television Association (“NCTA”) that any proposed changes to the spectrum allocations for the 3.7 GHz and 6 GHz bands must take into account the important existing uses of these bands. To this end, before authorizing these bands for flexible wireless or expanded fixed broadband use, the Commission should compile a complete record to demonstrate that new operations will fully protect existing satellite and CARS users from harmful interference.

II. CHARTER SUPPORTS THE COMMISSIONS’S EFFORTS TO EXPLORE ADDITIONAL SPECTRUM BANDS FOR WIRELESS BROADBAND SERVICES

Charter is pleased to see the Commission examining the expansion of wireless broadband services in mid-band spectrum. Charter is committed to launching a wireless offering in 2018 and sees wireless as a driver for future communications growth.³ Charter is using experimental licenses in various locations across the country, including Charlotte, North Carolina; Tampa, Florida; Colorado Springs, Colorado; and Bakersfield, California, as a means to explore wireless broadband opportunities in various spectrum bands, including the 3.5 GHz band and millimeter wave bands.⁴ Working with its vendors, Charter is conducting 5G and 4G LTE trials in a broad array of communities within these location areas to better understand how to use both mid-band

³ See Charter Communications, Inc. Comments, GN Docket No. 12-354 at 1 (filed July 24, 2017).

⁴ See, e.g., *Id.* at 1-2; FCC Experimental Special Temporary Authorization, CCO Fiberlink, File No. 0352-EX-CN-2017, Call Sign WI2XZY (granted July 7, 2017) (authorization to conduct experimental testing in 28 GHz band in Bakersfield, CA and Reno, NV); FCC Experimental Special Temporary Authorization, CCO Fiberlink, File No. 0864-EX-ST-2017, Call Sign WL9XMG (granted July 19, 2017) (authorization to conduct testing in Colorado Springs, CO).

and high-band spectrum to provide its customers with advanced communications services. These trials will inform Charter about the effectiveness of new wireless technologies in both indoor and outdoor settings, as well as explore Charter's ability to employ its existing assets to support extensive wireless small cell network deployments.⁵

Charter supports the Commission's efforts to examine the feasibility of utilizing both the 3.7 GHz and 6 GHz bands for wireless broadband. Given their close proximity to spectrum bands with either existing wireless broadband operations or where significant wireless broadband testing is underway, the 3.7 GHz and 6 GHz bands offer great potential for expanding and enhancing existing wireless broadband uses. This spectrum also will be globally harmonized for wireless broadband,⁶ enhancing its value for this purpose. The 6 GHz band particularly is well suited for unlicensed use in order to further expand the success of Wi-Fi.

III. PROTECTING EXISTING OPERATIONS IN MID-BAND SPECTRUM MUST BE CENTRAL TO ANY EFFORTS TO EXPAND WIRELESS BROADBAND SERVICES

Charter agrees with NCTA that the Commission must take appropriate steps to protect incumbent users in any expansion of wireless broadband services in mid-band spectrum. Charter currently is an incumbent user in the 3.7 GHz band with over 700 receive earth stations in the band. These incumbent operations are crucial to Charter's core video business as Charter primarily uses its earth stations for receiving video programming delivered to consumers across the country. Further, Charter has plans to construct new earth station facilities in the next few years. In addition, Charter maintains several CARS and microwave licenses in the 6 GHz band, which also are crucial to the services customers receive today, particularly in Charter's more

⁵ See, e.g., FCC, File No. 0352-EX-CN-2017, *supra* note 4; FCC, File No. 0864-EX-ST-2017, *supra* note 4.

⁶ See Diana Goovaerts, *FCC to Explore Use of 3.7 GHz to 24 GHz Spectrum for Mobile Broadband*, WIRELESS WEEK (July 14, 2017, 11:37 AM), <https://www.wirelessweek.com/news/2017/07/fcc-explore-use-37-ghz-24-ghz-spectrum-mobile-broadband>.

rural service areas.

As both an incumbent user in mid-band spectrum as well as an entity interested in exploring wireless broadband services in these bands, Charter uniquely is positioned to help develop a fair and equitable solution to the challenge of allocating mid-band spectrum to wireless broadband use while preventing disruption to existing uses of the band. In this regard, Charter encourages the Commission to examine a comprehensive set of solutions, including the potential for a spectrum sharing regime in the 3.7 GHz band. In fact, industry groups already are starting to examine interference concerns within the 3.7 GHz and 6 GHz bands. The information gathered will enable companies, including Charter, to play a constructive role in developing a carefully considered recommendation that will both protect incumbent users and support advanced wireless communications technologies in these bands, including 5G.

IV. CONCLUSION

For the foregoing reasons, the Commission should continue on its course to explore opportunities for making additional mid-band spectrum available for wireless broadband services, including in the 3.7 GHz and 6 GHz bands. At the same time though, the Commission must continue to protect incumbent users in both of these bands as they are integral to Charter's successful delivery of video programming to its customers. By taking these steps, the Commission will ensure that it maintains a well-balanced approach for developing the next generation of wireless communications technologies.

Respectfully submitted,

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