

July 1, 2021

VIA ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street, NE
Washington, DC 20554

**Re: *Facilitating Shared Use in the 3100-3550 MHz Band*, WT Docket No. 19-348;
Promoting Investment in the 3550-3700 MHz Band, GN Docket No. 17-258**

Dear Ms. Dortch:

Some parties have recently proposed that the Commission consider raising maximum authorized power levels in the Citizens Broadband Radio Service (“CBRS”) band.¹ As entities and associations whose members have invested substantially in the CBRS band in reliance on the Commission’s innovative framework, we strongly oppose such a change. The FCC designed the CBRS band with lower power limits, county-size licenses, and an innovative sharing regime to connect American consumers, drive down costs, and increase competition in the wireless marketplace. Acting Chairwoman Rosenworcel has recognized the transformative opportunities this framework delivers, as she remarked earlier this year that “[w]e are making history with this innovative band. . . . This is exciting for consumers, providers, and the future of spectrum policy.”² Indeed, more than 200 entities won licenses in last year’s CBRS auction and over 270 qualified to bid in the auction.³ As a result, traditional wireless carriers, smaller providers, and new entrants alike are using this spectrum to provide important broadband connectivity to unserved Americans in rural and urban areas; to increase capacity and bring new services to consumers in served areas; to develop IoT or machine-to-machine deployments in factories to improve efficiency and safety; to provide smart city connectivity to improve safety and economic prosperity; and to offer private networks, including for schools and libraries desperately in need of connectivity for students, teachers, and library patrons.

As explained in more detail below, raising maximum authorized power levels in the CBRS band and creating a new associated device classification will favor macrocell deployments exclusively. In adopting its CBRS rules, the Commission expressly rejected calls for higher

¹ See, e.g., Letter from Jeffrey H. Blum, DISH Network Corp., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 19-348 (Mar. 31, 2021) (“DISH Letter”); Letter from Alexi Maltas, CCA, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 19-348, GN Docket No. 17-258 (Apr. 9, 2021) (“CCA Letter”).

² News Release, FCC, *Acting Chairwoman Rosenworcel Commends Progress in 3.5 GHz Band Spectrum Sharing Regime* (Mar. 9, 2021), <https://docs.fcc.gov/public/attachments/DOC-370639A1.pdf>.

³ *Auction of Priority Access Licenses in the 3550-3650 MHz Band Closes*, Public Notice, 35 FCC Rcd 9287, 9287, 9299-317 ¶ 1 & Attachment A (2020).

power in order to “create a flexible regime suitable for a wide variety of use cases.”⁴ The current proposals would undermine this important objective and fundamentally alter the nature of CBRS by creating additional interference to Priority Access License (“PAL”) operations and jeopardizing General Authorized Access (“GAA”) use, which results in less overall utilization of the spectrum by the largest number of participants. Such a result would disrupt the diverse and innovative services currently being deployed and inhibit future competition throughout the band.

Permitting increased power levels would frustrate the Commission’s objectives for this band by fundamentally changing the nature of CBRS. The Commission adopted the power limits for the CBRS band in recognition of the fact that the band is “particularly well-suited” for the use of small cell technology⁵ and to promote the goal of making the band “hospitable to a wide variety of users, deployment models, and business cases.”⁶ In doing so, the Commission carefully considered and rejected proposals for higher power limits. The Commission found that lower power limits would enable a more efficient use of this spectrum by (1) allowing greater spatial reuse of the band; (2) reducing coexistence challenges; and (3) increasing network capacity.⁷ On reconsideration, the Commission rejected increasing power limits across the board, finding instead that limited changes—slightly increasing power limits only for certain CBRS devices—would provide “increased flexibility to all network operators without increasing the potential for interference in the [CBRS] [band].”⁸

CBRS users and operators have designed their networks around the viability of small cell operations and the mix of PALs and GAA use contemplated by the Commission’s rules, with the goal of deploying the array of services and applications that the Commission intended when it adopted, and later affirmed, lower power limits for this band. Many entities, including wireless internet service providers (“WISPs”), have deployed extensively in the CBRS band.⁹ Modifying the CBRS power rules now could significantly undermine those existing deployments by

⁴ *In re Amendment to the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Order on Reconsideration and Second Report and Order, 31 FCC Rcd 5011, 5032 ¶ 76 (2016) (“*Reconsideration Order*”).

⁵ *In re Amendment to the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959, 3961 ¶ 1 (2015) (“*2015 Order*”).

⁶ *Id.* at 3961 ¶ 6.

⁷ *Id.* at 4026 ¶ 214.

⁸ *Reconsideration Order*, 31 FCC Rcd at 5031 ¶ 75. The Commission indicated in its 2015 Order the “possibility” that it would “allow higher power limits for Category B non-rural use at a future point in time[.]” 2015 Order, 30 FCC Rcd at 4026-27 ¶ 214. In its *Reconsideration Order*, the Commission decided to raise the limits for Category B non-rural use to the same level that was authorized for Category B rural use in the 2015 Order. *Reconsideration Order*, 31 FCC Rcd at 5032 ¶¶ 77-78. Importantly, in neither order did the Commission suggest it would allow a higher maximum EIRP for any other type of CBRS device.

⁹ Currently, almost 150,000 Citizens Broadband Radio Service Devices (“CBSDs”) have been deployed, and the Commission has certified more than 130 CBSD models and 200 consumer devices. See Dave Wright, Dynamic Spectrum Alliance Global Summit: *OnGo & CBRS Update 5* (June 9, 2021), <http://dynamicspectrumalliance.org/wp-content/uploads/2021/06/Session-3-Panel-Dave-Wright.pdf>.

increasing interference from higher power macrocellular operations and thereby reducing both the viability of PALs and the availability of spectrum for GAA. Moreover, as a practical matter, had the Commission incorporated higher power levels into its technical rules prior to the CBRS auction, bidders likely would have discounted the availability of GAA as they developed their bidding strategies and designed their networks and determined that more PALs were needed to ensure sufficient spectrum for planned operations.

Raising maximum authorized power levels in the CBRS band would result in additional interference for both PAL operations and GAA use and may endanger incumbents, such as existing DoD operations. The current proposals to significantly raise maximum authorized power levels assert that CBRS devices operating at a maximum allowable equivalent isotropically radiated power (“EIRP”) of 62 decibel-milliwatts (“dBm”)/10 MHz and 72 dBm/10 MHz would not increase interference in the band,¹⁰ but their proposals fail to address all of the possible sources of interference. While the proponents of higher power operations argue that the PALs will still be protected by the Spectrum Access System (“SAS”), this is true only when CBRS devices are operating on the same frequencies (“*co-channel* interference”) and come at the cost of GAA services in the increased coverage area. These arguments ignore the fact that high power CBRS devices will create additional interference to small cell networks due to the operation of devices on nearby but not overlapping frequencies (“*adjacent* channel interference”). The SAS is not statutorily obligated to protect against adjacent channel interference and the resulting harmful interference to PALs would violate the rules guaranteeing them protection against harmful interference.¹¹

Many of the small cell networks being designed and deployed in the CBRS band are based on the current power levels (as originally outlined in the technical rules). To overcome an increase in interference from nearby higher power base stations, these networks would have to increase their own transmit power levels, but cannot because they are limited to their currently deployed small cell limits. The adjacent channel interference would reduce these small cell networks’ effective coverage and service throughput, a phenomenon further compounded when time division duplexing synchronization is not maintained between these network operators.

Interference concerns are also problematic for GAA operations. Higher power will expand the area covered by both GAA and PAL CBRS devices, leading to greater coverage overlap even in areas a macrocell operator does not intend to provide service. To prevent co-channel interference in areas of overlap, the SAS would need to move GAA operations to other channels, reduce the spectrum available for GAA operations, and provide larger protection areas for PALs operating at higher power. These accommodations due to the higher power levels would effectively allow macrocells to “claim” more spectrum coverage, further advantaging high power macrocell networks over small cell networks. Moreover, the shrinking of available spectrum for GAA operations would cascade as neighboring PAL operators increase their own transmit power levels to safeguard against interference.

¹⁰ CCA Letter at 1-2; DISH Letter at 1-2.

¹¹ See 47 C.F.R. §§ 2.102(b), 96.1(b).

Such an outcome is inapposite to the innovative spectrum sharing concept the Commission enabled when it adopted the CBRS framework.¹² Indeed, adopting higher power limits would undermine the foundational “use it or share it” framework¹³ that currently exists between PAL holders and GAA users by favoring the deployment of macrocellular infrastructure on an essentially exclusive (or at least predominant) basis at the expense of GAA operations. This constraint on spectrum usage is certainly not what the Commission had in mind when it sought to create a more innovative, efficient, and competitive spectrum sharing regime to spur flexible non-traditional deployment models, including those designed to help close the homework gap.¹⁴

Higher powered operations could also have an adverse impact in rural areas, where many carriers are already operating fixed wireless networks. Many fixed wireless networks operate at equal or nearly equal power levels for both downlink and uplink. Unfortunately, currently available user equipment does not allow higher power operation and, moreover, it would not be practical to develop such high power equipment to use in consumer homes for the uplink. As a result, these rural providers would not be able to take advantage of higher power levels, and would be subject to the same interference concerns that small cell devices face with macrocell operations.

Raising power from the mutually agreed existing levels may also harm incumbent operations in the CBRS band.¹⁵ For instance, higher power operations will require larger Dynamic Protection Area (“DPA”) neighborhoods.¹⁶ In addition, high power operations could endanger existing Department of Defense (“DoD”) operations in the band, creating a series of triggering events that could ultimately lead DoD to increase the size of the DPA protection zones themselves. All CBRS networks operating within coastal protection areas may feel the effect of this more broadly because the increased power would impact Environmental Sensing Capability (“ESC”) “whisper zones”—the areas around the ESC sensors where CBRS operations must be controlled so as not to exceed received energy thresholds to the sensors. Because interference to DPAs and ESCs is aggregated, it could require all networks in the area to reduce their power further to protect incumbent operations in the band. An increase in power would also impact all CBRS networks operating within Fixed Satellite Service Earth Station Protection Zones, which

¹² See *2015 Order*, 30 FCC Rcd at 3975 ¶ 44 (“By adopting a flexible access model across the entire band, we aim to create a versatile 150 megahertz band for shared wireless broadband use that can adapt to market and technological opportunities.”).

¹³ 47 C.F.R. § 96.13(a)(3) (“Any frequencies designated for Priority Access that are not in use by a Priority Access Licensee may be utilized by General Authorized Access Users.”).

¹⁴ See Michael Calabrese & Amir Nasr, *The Online Learning Equity Gap*, New America’s Open Tech. Inst. 30-36 (2020), https://d1y8sb8igg2f8e.cloudfront.net/documents/The_Online_Learning_Equity_Gap.pdf.

¹⁵ DOD, the FCC, and industry worked together for several years to study and reach agreement on the existing power levels.

¹⁶ DPAs are defined areas in which incumbents may be operating systems that require protection. DPAs are defined for coastal waters, some harbors, ports, and ship transit areas, and some inland areas. DPA neighborhoods are defined areas around the DPAs in which CBRS devices must be considered in the calculation of aggregate interference to the DPA.

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may consequently require reduced operating power for all CBRS devices within those respective areas too.

In essence, proposals to raise maximum authorized power levels in the CBRS band already have been squarely addressed and rejected by the Commission. And parties have been investing and deploying commercial and non-commercial services in the band since the September 2019 Initial Commercial Deployment authorization, with the range of deployers and use cases fully reflecting the Commission's objectives for CBRS. Higher power limits threaten to undercut these innovative uses. In fact, the proposals could jeopardize the ability of schools, libraries, and other anchor institutions to extend wireless broadband service to students, teachers, and library patrons using CBRS.¹⁷ Accordingly, to ensure that the CBRS band remains available for advanced, groundbreaking technologies and for needed service to Americans, we respectfully urge the Commission to reject these proposals.

Respectfully submitted,

Elizabeth Andrion

Senior Vice President, Regulatory Affairs

Colleen King

Vice President, Regulatory Affairs

CHARTER COMMUNICATIONS, INC.

601 Massachusetts Avenue, NW

Suite 400W

Washington, DC 20001

Keith Krueger, CAE

CEO

CoSN – CONSORTIUM FOR SCHOOL NETWORKING

1325 G Street, NW

Suite 420

Washington, DC 20005

Michael Calabrese

Director, Wireless Future Program

OPEN TECHNOLOGY INSTITUTE AT NEW

AMERICA

740 15th Street, NW

Suite 900

Washington, DC 20005

Harold Feld

Senior Vice President

PUBLIC KNOWLEDGE

1818 N Street, NW

Suite 410

Washington, DC 20036

John Windhausen

Executive Director

SCHOOLS, HEALTH & LIBRARIES BROADBAND

(SHLB) COALITION

1250 Connecticut Avenue, NW

Suite 700

Washington, DC 20036

Louis Peraertz

Vice President

WIRELESS INTERNET SERVICE PROVIDERS

ASSOCIATION

4417 13th Street, #317

Saint Cloud, FL 34769

¹⁷ See, e.g., *supra* note 14.