

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

In the Matter of)	
)	
University of Utah Request for Waiver of Part 96)	WT Docket No. 22-257
of the Commission's Rules)	
)	

ORDER

Adopted: July 31, 2025**Released: July 31, 2025**

By the Chief, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. By this Order, the Wireless Telecommunications Bureau (the Bureau) conditionally grants the request of the University of Utah (the University) for waiver of section 96.39(g) of the Commission's rules.¹ We also waive section 96.49 of the Commission's rules on our own motion. The University operates a research tool using an experimental license over a small geographic area in Salt Lake City. With a conditional waiver of the security and equipment authorization requirements required by these rule sections, the University can engage in valuable, innovative research using mid-band spectrum in its experimental sand box, with little risk of causing harmful interference to commercial users.² For the reasons discussed in more detail below, the Bureau finds that the University has satisfied the requirements of section 1.925(b)(3) of the Commission's rules and, accordingly, grants the University's waiver request to facilitate operations on a General Authorized Access (GAA) basis, subject to the conditions set forth herein.

II. BACKGROUND

2. *Citizens Broadband Radio Service.* The Citizens Broadband Radio Service is characterized by a sharing regime in which Spectrum Access Systems (SASs) coordinate access among three tiers of users in the 3.55-3.7 GHz band (3.5 GHz band): incumbents (federal radar systems and grandfathered fixed satellite service operations), holders of Priority Access Licenses (PALs), and GAA users.³ Citizens Broadband Radio Service Devices (CBSDs) are subject to various requirements to ensure that SASs are able to minimize harmful interference. These requirements relate to, in relevant part: geo-location and reporting capability, registration with a SAS, frequency reporting, and device security, and

¹ Request of University of Utah for Waiver of the Commission's Citizen's Band Radio Service Rules to Authorize Use of Software-Defined Radio Equipment to Interact with the Spectrum Access System, WTB No. 22-257, (filed Mar. 31, 2022), <https://www.fcc.gov/ecfs/document/1070768678652/1> (Waiver Request).

² See Waiver Request at 2-3, 9-10.

³ See *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959, 3975-80, paras. 44-59 (2015); see also 47 CFR §§ 96.53-96.66.

each is addressed in section 96.39 of the Commission's rules.⁴ Section 96.49 requires that CBSDs receive equipment authorization.⁵

3. *POWDER Platform.* The University currently holds program experimental authorizations to operate the POWDER platform on campus and also, under that authorization, operates in the Salt Lake City Innovation Zone, an area of approximately four square miles (less than 25 by 10 city blocks), including the University campus, a small portion of downtown, and a corridor connecting the campus to downtown.⁶ POWDER is a research tool made up of both fixed and mobile radio systems, including software-defined radios (SDRs).⁷ According to the University, the primary objective of the POWDER platform is to enable innovation and research associated with wireless systems and spectrum use.⁸ Program experimental licenses like the one held by the University are, available only to certain colleges and universities, manufacturers, and other qualified institutions,⁹ and they require a "stop buzzer" point of contact who can address interference concerns and cease all transmissions immediately if interference occurs.¹⁰ Experimental licenses are also subject to a general non-interference criterion, which requires that such licensees may not cause harmful interference to any station operating in accordance with the Table of Frequency Allocations and shall immediately cease transmissions if harmful interference occurs.¹¹

4. *Waiver Request.* In 2022, the University filed a request to waive portions of section 96.39 of the Commission's rules to allow its POWDER platform to operate in the Citizens Broadband Radio Service.¹² The University asserts that it must operate the platform with GAA or PAL status under part 96 because spectrum that is available under part 5 on an experimental, non-interfering basis is too limited for POWDER's mid-band studies and such spectrum will likely become even more scarce as Citizens Broadband Radio Service operations expand.¹³ Therefore, the University asks that POWDER be permitted to interface with a SAS, receive frequency and channel assignments, and operate as a GAA or PAL user may.¹⁴ The University submits that SDRs operating on the POWDER platform would not themselves comply with section 96.39's CBSD requirements because they would not connect directly with a SAS.¹⁵ Instead, a Domain Proxy would interface with the SAS and with POWDER's Spectrum Control equipment.¹⁶ POWDER Spectrum Control would monitor and control the SDRs on the platform,

⁴ See 47 CFR §§ 96.39(a) (Geo-location and reporting capability), (c) (Registration with SAS), (e) (Frequency reporting), (g) (Device security).

⁵ See *id.* § 96.49.

⁶ The Office of Engineering and Technology created the Innovation Zone for Salt Lake City to provide opportunities for qualified licensees to test new advanced technologies and prototype networks. *Office of Engineering and Technology Announces First Innovation Zones for Program Experimental Licenses*, ET Docket No. 19-257, Public Notice, 34 FCC Red 8130, 8130-32 (OET 2019) (*Innovation Zone Public Notice*).

⁷ See Waiver Request at 2-3, Exhibit A.

⁸ See *id.* at 2.

⁹ 47 CFR § 5.302.

¹⁰ *Id.* § 5.308.

¹¹ *Id.* § 5.84.

¹² See Waiver Request at 6-9. The University initially sought waiver of 47 CFR §§ 96.39 (a), (c), (d), (e), and (g) but later withdrew its request for waiver of section 96.39(d). See University Reply Comments at 6.

¹³ See Waiver Request at 3-4.

¹⁴ See *id.*

¹⁵ *Id.* at 4.

¹⁶ See *id.* at Exhibit B.

and would terminate transmissions that violate SAS authorization and fail to make necessary adjustments within 50 seconds.¹⁷

5. The University requests that the Commission waive the CBSD requirements in subparts (a), (c), (e), and (g) of section 96.39, so that it may use SDR equipment to operate in the 3.5 GHz band within the POWDER Platform Innovation Zone on either a GAA or PAL basis.¹⁸ Alternatively, the University requests that the Commission clarify that the POWDER platform's Domain Proxy, by virtue of its interactions with POWDER SDRs via POWDER Spectrum Control, meets the definition of a multi-nodal CBSD, satisfies the requirements of sections 96.39(a), (c), and (e), and therefore requires no waiver of those provisions.¹⁹ In either case, the University asks the Commission to waive section 96.39(g) to allow researchers using the platform to update software and firmware for the CBSD equipment, a key element of their experiments.²⁰ The University proposes that, if it is granted, we impose several conditions on the waiver.²¹

6. The Bureau sought comment on the University's request in July 2022.²² Three parties filed comments and the University filed reply comments.²³ Federated Wireless, a SAS administrator, contends that POWDER appears to comply with the Commission's rules governing Domain Proxies and suggests that the requested waiver may not be necessary.²⁴ NCTA argues that the request lacks sufficient information regarding the University's operations, including the risk of interference to PALs and GAA users, whether the SDRs would all be used as CBSDs and operate within their authorizations, and what signal level information the University would report to a SAS.²⁵ NCTA requests that, if granted, the waiver be narrow, with appropriate safeguards to prevent interference, and be limited in time and in scope; NCTA endorses the University's proposed conditions and suggests additional conditions as well.²⁶ The OnGo Alliance noting concerns regarding the interactions between the SAS and the Domain Proxy and CBSDs, says that the waiver request did not clarify whether the CBSDs or the Domain Proxy would be certified and have a valid FCC ID, and questions whether POWDER will comply with other rules governing CBSD requirements and SAS connectivity.²⁷

7. In reply comments, the University emphasizes that POWDER's Domain Proxy and SDRs would register with a SAS as CBSDs and says that POWDER would comply with all part 96 rules, except where the University specifically requests waiver.²⁸ The University proposes to confine POWDER's

¹⁷ See *id.* at 6-8.

¹⁸ See *id.* at 4-6.

¹⁹ See *id.* at 5.

²⁰ 47 CFR § 96.39(g); see Waiver Request at 8.

²¹ See Waiver Request at 12; Letter from Seth L. Williams, Counsel for the University of Utah, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 22-257 (filed Oct. 21, 2022) (October 2022 *Ex Parte*); Letter from Seth L. Williams, Counsel for the University of Utah, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 22-257 (filed March 20, 2025) (March 2025 *Ex Parte*).

²² *Wireless Telecommunications Bureau Seeks Comment on the University of Utah's Request to Waive Section 96.39 of the Commission's Rules*, WT Docket No. 22-257, Public Notice, 37 FCC Rcd 7787 (WTB 2022).

²³ The parties filing comments included Federated Wireless, NCTA – The Internet & Television Association, and the OnGo Alliance.

²⁴ See Federated Wireless Comments at 1-3.

²⁵ See NCTA Comments at 2-4.

²⁶ See *id.* at 5-6.

²⁷ See OnGo Alliance Comments at 1-4.

²⁸ See University Reply Comments at 1-3.

operation to the Salt Lake City Innovation Zone and to provide a point of contact for interference complaints and “stop buzzer” procedures.²⁹ The University acknowledges Federated Wireless’s observation that POWDER may comply with the requirements of sections 96.39(a), (c), and (e) through its use of the Domain Proxy.³⁰ The University maintains that waiver of section 96.39(g) remains necessary because POWDER experimenters must be able to modify CBSD software and firmware to conduct their research.³¹

III. DISCUSSION

8. Section 1.925(b)(3) of the Commission’s rules states that the Commission may grant a waiver when the Commission finds that either (i) “[t]he underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest,” or (ii) “[i]n view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.”³² After consideration of the University’s waiver request and the record in this proceeding, we find that the University has satisfied the requirements of section 1.925(b)(3) and, accordingly, we waive section 96.39(g) of the Commission’s rules, subject to the conditions set forth below.³³

9. First, we find that the purpose of section 96.39(g) would not be served by its strict application in this case, and that waiver is in the public interest. The Commission adopted the rule as part of its effort to ensure data security in the Citizens Broadband Radio Service; namely, CBSDs must be equipped with sufficient features to protect their firmware and software against modification by unauthorized parties.³⁴ In its request, the University asserts that a waiver of section 96.39(g) is necessary to permit operators using the POWDER platform to modify the SDRs that will operate as their CBSDs. The University argues that the use and modification of SDRs is an essential part of the innovative development work that it is conducting in the Salt Lake City Innovation Zone.³⁵ According to the University, this work will support valuable mid-band experimentation and further the development of new wireless technologies. In support of its request, the University cites several aspects of its proposed operations that would minimize the types of security concerns addressed in 96.39(g). Notably, consistent with the terms of the University’s program experimental license, the POWDER platform is not available to the general public and its users must be authorized by the University.³⁶ The University has confirmed that its devices will only operate within the geographic confines of the Salt Lake City Innovation Zone.³⁷ The University also confirmed with the National Telecommunications and Information Administration

²⁹ See *id.* at 3-4.

³⁰ See *id.* at 5-6; see also 47 CFR §§ 96.39(a), (c), (e).

³¹ See University Reply Comments at 5-6; see also 47 CFR § 96.39(g).

³² 47 CFR § 1.925(b)(3).

³³ Based on the submissions of the University and Federated Wireless, it appears that the University’s planned CBSDs and Domain Proxy may otherwise comply with the Commission’s rules (with the exception of section 96.39(g)), obviating the need for a waiver of sections 96.39(a), (c), or (e). See University Reply Comments at 5-6; Federated Wireless Comments at 1-3. If the University is unable to successfully commence operations under the terms of this waiver order, it may submit a new or modified request for relief.

³⁴ See *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959, 4033-34, paras. 238-40 (2015); see also 47 CFR § 96.39(g).

³⁵ See Waiver Request at 1-3; University Reply Comments at 5-6.

³⁶ See Waiver Request at 12 & n.23.

³⁷ See *id.*, Exhibit A.

(NTIA) that no federal incumbents operate in the vicinity of the platform's service area, but it suggests a regular renewal process to account for future changes in Citizens Broadband Radio Service user presence near Salt Lake City.³⁸ After consulting with the Commission and other stakeholders,³⁹ the University has encouraged us to adopt conditions to enforce these, and other, limitations on their operations to ensure that the waiver is as narrowly tailored as possible.

10. After review of the record, we find that the University's proposed operations, and the conditions imposed herein, will minimize security and interference risks and ensure that the purpose of section 96.39(g) is fulfilled.⁴⁰ We also find that the experiments conducted using the University's POWDER system are in the public interest as they may inform the development of new wireless technologies, including innovative approaches to spectrum management.⁴¹ We also note that, consistent with the University's representations and the conditions described below, the University will be required to comply with all other rules governing operations in the Citizens Broadband Radio Service. For these reasons, we find that the University has satisfied the requirements of section 1.925(b)(3)(i).

11. For similar reasons, we also find that the POWDER platform presents unique circumstances, and that application of section 96.39(g) here would undermine the public interest. As noted above, the platform is confined to users that receive University authorization, they operate only in Salt Lake City, and the University's proposed conditions minimize security concerns that might otherwise arise from this waiver. Given the narrow scope of the request, our ability to mitigate any CBSD security risks with appropriate conditions, and the potential for POWDER platform experimentation to bolster our understanding of evolving wireless technologies, we find that the University's request also satisfies the requirements of section 1.925(b)(3)(ii).

12. On our own motion, we also find that requiring the University to request equipment authorization, as required by section 96.49, would be unduly burdensome in these unique circumstances.⁴² Researchers can upload software and firmware that reprograms the SDRs used on the POWDER platform.⁴³ These SDRs are well suited for experimentation, but it would be an impediment to those efforts if the University were bound to seek authorization for every SDR configuration that its researchers might test.⁴⁴ As detailed above, the University is already authorized to use these devices for experimental operations under part 5 of the Commission's rules without separate equipment certification. The University has agreed that its use of such devices in the Citizens Broadband Radio Service will be subject to a variety of safeguards—including access limitations, constant system monitoring, and the use of a stop buzzer—that are largely consistent with the limitations placed on its experimental authorization.⁴⁵ The University has also agreed that, consistent with the requirements of its experimental authorization, it will not market or sell the equipment authorized by this waiver order.⁴⁶ As such, we find that requiring the University to obtain certification for this equipment would be unduly burdensome and would not advance the public interest. We therefore waive section 96.49, subject to the conditions imposed herein.

³⁸ The University initially maintained that we need not limit the duration of its waiver. University Reply Comments at 6-7. But it has since revised that position in order to ensure coexistence, and after consultation with NTIA. *See* October 2022 *Ex Parte* at 1-2, n.3.

³⁹ *See* Waiver Request at 3-5, 12; October 2022 *Ex Parte* at 2; March 2025 *Ex Parte* at 1.

⁴⁰ *See* Waiver Request at 10-12, Exhibit B; *see also* University Reply Comments at 2-4.

⁴¹ *See* Waiver Request at 1-2, 9-10.

⁴² *See* 47 CFR §§ 1.925(a), (b)(3)(ii); *see also* 47 CFR § 96.49.

⁴³ *See* Waiver Request at 3.

⁴⁴ *See id.* at 8-9.

⁴⁵ *See id.* at 12; October 2022 *Ex Parte* at 2; March 2025 *Ex Parte* at 1.

⁴⁶ *See* October 2022 *Ex Parte* at 2.

13. Finally, we find good cause to allow the University to operate the POWDER platform in the 3.5 GHz band on a GAA basis, subject to the conditions imposed by this order and the Commission's rules establishing the rights and obligations of GAA use.⁴⁷ GAA status will provide the University with sufficiently reliable access to the band to conduct their valuable research without increasing the risk of harmful interference to other operators in the 3.5 GHz band.⁴⁸ We again emphasize that this unique Citizens Broadband Radio Service use case is limited in its geographical scope, will include robust safeguards to prevent harmful interference, and has the potential to advance the state of knowledge of mid-band spectrum use.⁴⁹

14. For the reasons discussed above, we grant the University of Utah's request for a waiver of section 96.39(g) and waive section 96.49 on our own motion to permit its POWDER platform to conduct operations in the 3.5 GHz band, subject to the following conditions:

- (1) This waiver is granted for an initial term of one year, and may be renewed for four-year terms thereafter with the Bureau's approval.
- (2) Service provided using the POWDER platform must be limited to users or researchers authorized by the University.
- (3) The POWDER platform equipment installation and SDR modifications must be performed by platform operators or authorized researchers and technicians utilizing the platform.
- (4) The Domain Proxy or POWDER Spectrum Control must interface with an appropriate SAS to maintain control over the POWDER network and must terminate transmissions in violation of SAS authorization within 50 seconds.
- (5) The POWDER platform must be monitored at all times, and a stop buzzer procedure must be available as a safety backup for POWDER Spectrum Control.
- (6) Operations conducted pursuant to this Order must comply with all applicable Part 96 rules except as specifically waived herein.
- (7) POWDER platform equipment must remain under the control of the Domain Proxy or POWDER Spectrum Control at all times, and no commercial use, sale, or resale of POWDER platform equipment is permitted.
- (8) POWDER platform operations must use inline RF monitoring to ensure that SDRs operate within SAS-authorized parameters while operating in the 3.5 GHz band, and that they maintain connectivity to the Domain Proxy.
- (9) The University must report to the Commission within 14 days of any interference reported to the University regarding the POWDER platform's operations.
- (10) Prior to initial operation, the University must consult with the Commission's Office of Engineering and Technology to ensure that the POWDER platform can successfully communicate with the SAS.

15. These conditions are similar to those that the University proposed after consultation with the Commission, NTIA, and commenting parties.⁵⁰ Based on the University's representations, these

⁴⁷ See, e.g., 47 CFR § 96.35. The University does not hold any PALs and, as such, operation on a Priority Access basis is not currently possible.

⁴⁸ See Waiver Request at 3-6.

⁴⁹ 47 CFR § 96.35(e).

⁵⁰ See Waiver Request at 12; October 2022 *Ex Parte* at 1-2; March 2025 *Ex Parte* at 1.

conditions will enable operations using the POWDER platform without negative impacts on existing operations in the 3.5 GHz band.

IV. ORDERING CLAUSES

16. Accordingly, IT IS ORDERED, pursuant to sections 4(i) and 303(i) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(i), and section 1.925 of the Commission's rules, 47 CFR § 1.925, that the request filed by the University of Utah for waiver of section 96.39(g) of the Commission's rules is GRANTED with the conditions specified herein.

17. IT IS FURTHER ORDERED that, pursuant to sections 4(i) and 303(i) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(i), and section 1.925 of the Commission's rules, 47 CFR § 1.925, that section 96.49 of the Commission's rules is WAIVED as to the University of Utah with the conditions specified herein.

18. This action is taken under delegated authority pursuant to sections 0.131 and 0.331 of the Commission's rules, 47 CFR §§ 0.131, 0.331.

FEDERAL COMMUNICATIONS COMMISSION

Joel Taubenblatt
Chief, Wireless Telecommunications Bureau