

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Promoting Efficient Use of Spectrum through)	ET Docket 22-137
Improved Receiver Interference)	
Immunity Performance)	

COMMENTS OF TECHFREEDOM

TechFreedom hereby files these Comments in the above-referenced proceeding in response to the Commission’s Notice of Inquiry (NOI).¹ Here we address certain policy and legal issues raised in the NOI.²

1. We Applaud the Commission for Beginning this Proceeding with a Notice of Inquiry

TechFreedom has long urged the FCC not to issue an NPRM in the “asking questions” stage of a proceeding. We applaud the Commission for issuing this NOI rather than an NPRM.³ Whatever discretion the Commission enjoys under the Administrative Procedure

¹ In the Matter of Promoting Efficient Use of Spectrum Through Improved Receiver Interference Immunity Performance, Notice of Inquiry (Apr. 21, 2022) (“NOI”), <https://www.fcc.gov/document/fcc-launches-proceeding-promoting-receiver-performance-0>. The NOI was published in the Federal Register on May 13, 2022, 87 Fed. Reg. 29248 (May 13, 2022), and set the comment date as June 27, 2022. These comments are timely filed.

² TechFreedom is a non-profit think tank dedicated to promoting the progress of technology that improves the human condition. To this end, we seek to advance public policy that makes experimentation, entrepreneurship, and investment possible, and thus unleashes the ultimate resource: human ingenuity.

³ See TechFreedom, Comments on Expanding Flexible Use of the 12.2-12.7 GHz Band, (Jul. 7, 2021), <http://techfreedom.org/wp-content/uploads/2021/05/TF-Comments-12-GHz-NPRM-4-7-21.pdf>; TechFreedom & The International Center for Law & Economics, Reply Comments on Modernizing

Act⁴ to configure its rulemaking process, the longstanding pattern—under chairs of both parties—of jumping directly to an NPRM without an NOI often leads to a situation of “ready, fire, aim!”⁵ The Commission cannot understand complex issues without basic comments generated by an NOI. Notwithstanding that receiver performance has been studied multiple times over the past 20 years,⁶ there remain too many questions to move to an NPRM.

2. The FCC Cannot Fine-Tune Spectrum Management with Only Half the Orchestra

In this proceeding, the Commission undertakes the difficult task of integrating receiver performance metrics into its overall spectrum management system. As noted in the NOI, these are not novel questions, having been studied for well over 20 years. TechFreedom encourages this renewed interest in a holistic approach to spectrum policy, but we begin by noting what is excluded from this proceeding: coordination with NTIA and users of government receivers.

This NOI does not seek comment on or address the interagency process between the Commission and NTIA or other Federal agencies on overlapping

the E-rate Program for Schools and Libraries, at 4 n.8, (Nov. 7, 2013), http://docs.techfreedom.org/E_Rate_Reply_Comments.pdf (“the FCC should have issued a Notice of Inquiry before issuing this NPRM for precisely this reason—a mistake the FCC all too often makes, frequently putting the Commission in the awkward position of being on the verge of rulemaking without first properly exploring the facts on the ground. This is the worst kind of putting the cart before the horse.”).

⁴ Pub. L. No. 79-404, 60 Stat. 237 (1946) (codified as amended at 5 U.S.C. § 551 et seq.).

⁵ See also *FCC Violates Basic Legal Principles in Rush to Regulate Set-Top Boxes*, TECHFREEDOM (Feb. 18, 2016), <https://techfreedom.org/fcc-violates-basic-legal-principles-in-rush-to/> (“This is simply the latest example of the FCC abusing the rulemaking process by bypassing the Notice of Inquiry . . . Every time the FCC does this, it means the gun is already loaded, and ‘fact-finding’ is a mere formality.”).

⁶ See NOI ¶¶ 4-32 (Apr. 21, 2022), <https://www.fcc.gov/document/fcc-launches-proceeding-promoting-receiver-performance-0.NOI> (discussing past proceedings and studies, including the 2003 NOI in ET Docket No. 03-65, designed to address the issue of receiver performance as part of the FCC’s spectrum management policies).

non-Federal and Federal spectrum management issues. As we continue to work through that established process with NTIA and other federal agencies, this inquiry will inform the Commission regarding whether it should consider more concrete actions in the future.⁷

This is a mistake. History tells us that many issues related to receiver performance and spectrum allocation lie at the intersection between commercial allocations and legacy government receivers.⁸ The NOI also tells us that there is virtually no “greenfield” spectrum left, each new allocation by the FCC will cause pain to existing (often government) users:

Greenfield spectrum—open and cleared for use—is hard to find in the current spectral environment. To make spectrum available for new and expanded services, existing spectrum users are packed into a more congested environment, as transmitters and receivers increasingly are situated in closer spectral and geographic proximity. In this congested environment, it is challenging to meet the demands for spectrum availability by simply relying on spectrum management tools used in the past.⁹

Without engaging government users, there will be little progress made toward finding broad solutions to increased spectrum congestion. The FCC can work to make commercial spectrum users more efficient, but if the government doesn’t deal with highly inefficient legacy government systems, this proceeding cannot achieve its intended

⁷ *Id.* ¶ 1 n.1.

⁸ The problems with deploying C-Band spectrum for 5G use, for example, did not arise because of a failure of FCC processes, but rather the failure of NTIA to do its job of being the spokesperson for the administration (and government users as a whole) on spectrum issues. Instead, the FAA was able to swoop in at the eleventh hour to claim air safety issues, when those issues were fully addressed in the FCC rulemaking proceeding. See David Shepardson, *U.S. Lawmakers Blast Agencies over 5G C-Band Aviation Spectrum 'Ridiculousness'*, REUTERS (Feb. 3, 2022), <https://www.reuters.com/business/aerospace-defense/us-lawmakers-blast-agencies-over-5g-c-band-aviation-spectrum-ridiculousness-2022-02-03/> ("The process did not serve anyone well," [FAA Administrator Steve] Dickson said. "It did not serve the aviation community well, certainly the FAA, and it also did not serve the telecommunications industry well. And we certainly need to do better as a country.").

⁹ NOI ¶ 35.

purpose. It is as if the FCC were trying to get an orchestra to play in tune, but by only tuning the string section, while ignoring the winds in the last three rows.

3. The FCC must be Careful not to Exceed its Statutory Mandate

The NOI rightfully asks whether the Commission has the statutory authority over receiving devices.¹⁰ Some sections cited by the NOI are general in nature, providing significant question as to whether there is specific statutory authority for the Commission to regulate in this area. Several of the provisions cited by the NOI seem inapplicable here: Section 302a clearly governs only interference by transmitters or “performance standards for home electronic equipment”—not receivers generally.¹¹ Section 303(e) governs “external effects” and “emissions” while 303(f) governs “interference between stations.”¹² The Commission proposes to invoke “ancillary” authority to solve this problem.¹³ The Commission need look no further than its loss in the “broadcast flag” case, however, as a cautionary tale on relying on ancillary authority.

Great caution is warranted here, because the disputed [] regulations rest on no apparent statutory foundation and, thus, appear to be ancillary to nothing. Just as the Supreme Court refused to countenance an interpretation of the second prong of the ancillary jurisdiction test that would confer “unbounded” jurisdiction on the Commission, *Midwest Video II*, 440 U.S. at 706, 99 S.Ct. 1435, we will not construe the first prong in a

¹⁰ NOI ¶ 166 (*citing* Communications Act, 47 U.S.C. §§ 4(i), 301, 302(a), 303(e), (f), (r)).

¹¹ 47 U.S.C. ¶ 302a (“The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations (1) governing the interference potential of devices which in their operation *are capable of emitting radio frequency energy*. . .”) (emphasis added).

¹² Section 303(f) also empowers the commission to “[m]ake such regulations not inconsistent with law as it may deem necessary ... to carry out the provisions of this chapter.” This is, like Section 151, a means of invoking ancillary jurisdiction, rather than a specific hook to which such a claim can be tied.

¹³ *Id.* ¶ 169 (“Are such regulations reasonably ancillary to the Commission’s broad authority to ensure efficient use of radio spectrum?”).

manner that imposes no meaningful limits on the scope of the FCC's general jurisdictional grant.¹⁴

Ultimately, the Commission's authority may be limited to regulating interference limits for receivers, rather than mandating specific receiver performance specifications.¹⁵ TechFreedom looks forward to reading other comments on this gating issue before reaching a definitive conclusion, which might include recommending that Congress provide more specific statutory authority in this area.

4. Government-Mandated Technical Standards Often Backfire, Stifling Innovation

Even if it has statutory authority in this area, the Commission should be wary in stepping fully into this arena. The Commission's record in attempting to adopt *a priori* technical standards has been spotty at best. AM stereo has proven technically difficult and none of several different regulatory approaches have worked.¹⁶ It took the FCC 20 years to manage the digital television transition, and that involved a single service within a single band, with relative cooperation within the television industry.¹⁷ Regulation and innovation rarely coexist peacefully,¹⁸ because governments aren't very good at picking winners and

¹⁴ *Am. Libr. Ass'n v. FCC*, 406 F.3d 689, 692 (D.C. Cir. 2005).

¹⁵ NOI ¶ 168 ("More recently, the Commission adopted rules for commercial use of the 3.5 GHz Band that included protection limits afforded to receivers, although in that proceeding the Commission found it was unnecessary to mandate receiver performance specifications.").

¹⁶ See FCC, AM STEREO BROADCASTING, <https://www.fcc.gov/media/radio/am-stereo-broadcasting>.

¹⁷ See *Digital Television*, FED. COMM'NS COMM'N (updated Aug. 9, 2016), <https://www.fcc.gov/general/digital-television>; Gary Shapiro and Gordon Smith, *What the Digital Transition Teaches Us, A Decade Later*, BROADCASTING+CABLE (Jul. 15, 2019), <https://www.nexttv.com/blog/what-the-digital-transition-teaches-us-a-decade-later>.

¹⁸ See, e.g., John Stossel, *Regulation Kills Innovation. So These Entrepreneurs Didn't Ask for Permission*, REASON (July 14, 2021), <https://reason.com/2021/07/14/regulation-kills-innovation-so-these-entrepreneurs-didnt-ask-for-permission/> ("America has so many regulations that today, often the only way to do something new, to create something great, to prosper is to ignore rules.").

losers when it comes to technology.¹⁹ Innovation is inherently messy, and simply not readily amenable to top-down regulation.

The NOI sets forth several approaches the Commission could take to improving receiver performance, from nurturing industry-led voluntary approaches,²⁰ to issuing policy guidance documents and statements,²¹ to setting interference limits and harm claim thresholds,²² to issuing receiver performance mandates.²³ TechFreedom believes that this is the correct hierarchy, and the Commission should rarely, if ever, proceed down the list to the next level of regulation until all efforts in the preceding category have been exhausted. At each level, enlisting the expertise of stakeholders is vital. Further, with each regulatory level comes greater compliance costs, as the NOI recognizes.²⁴

5. No “One Size Fits All” Solution is Possible

Paragraph 57 perfectly encapsulates the fundamental challenge the Commission faces in addressing receiver performance, with so many different types of operators,

¹⁹ See Jim Powell, *Why Politicians Lose So Much Money Trying to Pick Winners*, FORBES (Oct. 24, 2011), <https://www.forbes.com/sites/jimpowell/2011/10/24/why-politicians-lose-so-much-money-trying-to-pick-winners/?sh=54bcdf5742af> (“The Solyndra scandal offers us a reminder that government isn't very good at picking winners and shouldn't try to do it. Thanks to Obama administration connections, this California-based solar panel maker had a \$535 million spending blowout at the taxpayers' expense, then fired everybody—some 1,100 jobs.”).

²⁰ NOI ¶ 80.

²¹ *Id.* ¶ 93.

²² *Id.* ¶ 119.

²³ *Id.* ¶ 137.

²⁴ NOI ¶ 162 (“There are both costs and benefits that are associated with the implementation of the various approaches discussed in this NOI for the Commission’s consideration as it seeks to promote improved receiver interference immunity performance in appropriate ways. We recognize that there could be a range of tradeoffs to consider.”) (footnote omitted).

manufacturers, and users, often sharing spectrum across widely divergence uses.²⁵ The one particular area where we are concerned, however, is protecting satellite users.²⁶ As the NOI recognizes, “In satellite services, receivers must be very sensitive to successfully receive the low level signals emanating from very distant satellites.”²⁷ At the same time, because satellite receivers have to operate with such tight tolerances and link budgets, they tend to be the best engineered components in use today. If the Commission is looking to generalize receiver performance standards, it should be cognizant that there is not much more performance that can be squeezed out of most satellite receivers.

6. The FCC Can Close the Asymmetric Information Gap through Part 15

The NOI discusses the problem of the “asymmetric information” environment encountered by both operators and consumers in not knowing the receiver characteristics

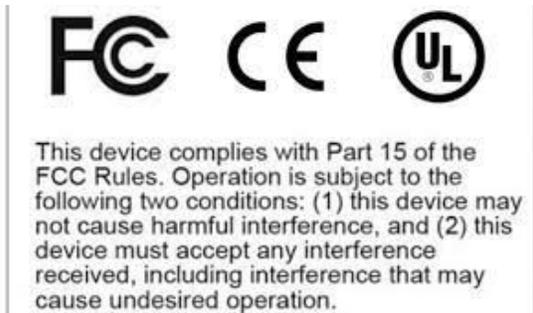
²⁵ *Id.* ¶ 57 (“We seek similar information as it pertains to various mobile services, fixed services, broadcast services, and other services. Each service category presents different use cases with different dependencies on the RF environment.”).

²⁶ TechFreedom, Comments on Modernizing and Expanding Access to the 70/80/90 GHz Bands, 35 F.C.C.R. 6039 (2020) (70/80/90 GHz NPRM) (Dec. 2, 2021), <https://techfreedom.org/wp-content/uploads/2021/12/TechFreedom-Comments-70-GHz-12-2-21.pdf>; TechFreedom, Comments on Expanding Flexible Access to the 12.2-12.7 GHz Band (May 7, 2021), <https://techfreedom.org/wp-content/uploads/2021/07/TechFreedom-Reply-Comments-7-7-21.pdf>; TechFreedom, Comments on Allocation of Spectrum for Non-Federal Space Launch Operations, ET Docket No. 13-115 (Sept. 10, 2021), <https://techfreedom.org/wp-content/uploads/2021/09/TechFreedom-Reply-Comments-13-115-9-10-21.pdf> (allocation of spectrum for non-federal space launches); Letter from TechFreedom to FCC (Nov. 2, 2020), <https://techfreedom.org/wp-content/uploads/2021/03/TechFreedom-Letter-to-FCC-11-2-20.pdf> (warning of danger of FCC granting “market access” to a company proposing very large satellites and licensed by a government (Papua New Guinea) which is not a signatory to the Liability Convention); TechFreedom, Comments on Rural eConnectivity Program, RUS-20-Telecom-0023 (Apr. 27, 2021), <http://techfreedom.org/wp-content/uploads/2021/04/TF-Comments-USDA-4-27-21.pdf> (urging that any grant for rural broadband deployment be technology neutral such as to allow satellite broadband providers to participate).

²⁷ NOI ¶ 55.

out in the real world.²⁸ In particular, the NOI asks “whether the Commission should consider requiring that more information about receiver characteristics be made available. Are there certain circumstances in which having additional information available to the Commission and relevant stakeholders would be helpful to introducing new services in adjacent or nearby bands?”²⁹ Having better information as to receiver performance would be helpful both to the FCC (and NTIA), as well as industry. One way the FCC could move forward in collecting this information is through its Part 15 equipment authorization process. Virtually

all electronic equipment sports an FCC logo. The FCC should consider, as part of this proceeding, examining whether it can use its Part 15 equipment authorization authority to require receiver manufacturers to report on



receiver capabilities. Both manufacturers and consumers have benefitted from several decades of streamlining of Part 15 by the FCC. Nonetheless, if implemented properly, requiring receiver manufacturers to report standardized information as to receiver capabilities into a publicly available database could be a non-burdensome solution to acquiring the data all parties need to make rational policy and business decisions.

²⁸ *Id.* ¶ 48, 66 (“some reports have emphasized the importance of clarity about the RF environment and how the lack of information (often in the form of asymmetric information) available to relevant stakeholders, particularly with regard to receiving systems, can impede the ability of parties seeking to introduce new services to make appropriate choices to reduce potential interference, and have recommended improving transparency for operators by requiring the sharing of more information on technical characteristics that affect adjacent band operations.”) (footnote omitted).

²⁹ *Id.* ¶ 67.

7. The FCC Should Explore Other Incentives to Improving Receiver Performance

The NOI uses the term “incentive” some 22 times. This includes citations to several prior studies that have emphasized that incentives can be used to prod equipment manufacturers as well as spectrum licensees to improve receiver performance.³⁰ Yet the forms of “incentives” identified in the NOI are anemic at best (and indeed some appear far more “stick” than “carrot”).³¹ Instead, the Commission should explore true incentives. These could take the form of making future allocations of spectrum contingent on a demonstration of spectral efficiency and receiver tolerance to in-band and adjacent interference.

Or the Commission could explore something akin to the old Pioneer’s Preference. The Commission established the Pioneer’s Preference in 1991 to reward innovation and “to encourage the development of new services and technologies.”³² Although much maligned³³

³⁰ See, e.g., *id.* ¶ 26 (CSMAC 2010 study “recommended developing incentives for promoting better receivers and transmitters”); *Id.* ¶ 27 (Kwerel and Williams paper proposing that the Commission “should provide better incentives to build more interference-robust systems in future allocations by moving away from a general interference protection model in spectrum management that often provides incumbent users protection against any interference resulting from subsequent rule changes”); *id.* ¶ 28 (Silicon Flatirons Reports); *id.* ¶ 30 (2013 GAO report noting “the lack of incentives for manufacturers or spectrum users to incur costs associated with using more robust receiver”).

³¹ See, e.g., *id.* ¶ 95 (issuing an FCC Policy Statement disavowing future interference protection would serve as an “incentive” for manufacturers to build better receivers); *id.* ¶ 111 (same).

³² See *In re Establishment of Procedures to Provide a Preference to Applicants Proposing an Allocation for New Services*, Report and Order, Gen. Doc. No. 90-217, 6 F.C.C.R. 3488, ¶ 32 (1991) (“Our objective in establishing a pioneer’s preference is to reduce the risk and uncertainty innovating parties face in our existing rule making and licensing procedures, and therefore to encourage the development of new services and new technologies.”).

³³ See, e.g., Kulpreet Singh, *The FCC’s Pioneer Preference Policy: An Innovative Idea Grows Old and Weary*, 22 RUTGERS COMPUT. & TECH. L.J. 153 (1996); John Friedman, Note: *Fostering Development of Advanced Telecommunications Technologies: The F.C.C., The Pioneer’s Preference & Personal Communications Services*, 12 CARDOZO ARTS & ENT. L.J. 545, 567 (1994).

and ultimately dismantled by Congress,³⁴ the program attempted to place innovation front-and-center in frequency allocation and licensing. This approach deserves a fresh look from the FCC, to determine if there are ways to reward innovators that develop better and more interference-tolerant receivers. This could include “fast-track” processing of licenses and equipment authorizations,³⁵ or other mechanisms that would spur innovation.

CONCLUSION

Bringing receiver performance into the discussion on how to better utilize spectrum assets is long overdue. As noted in the NOI, the Commission has a considerable expertise and prior work to review in assessing whether it has the statutory authority in this area, and how to best incentivize all parties to build more robust receivers to operate in more and more congested spectrum. TechFreedom looks forward to participating in this discussion.

Respectfully submitted,
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³⁴ See Commission Terminates Pioneer's Preference Program; Dismisses All Pending Pioneer's Preference Requests, FCC Report No. ET 97-7 (Sep. 4, 1997), https://transition.fcc.gov/Bureaus/Engineering_Technology/News_Releases/1997/nret7012.html.

³⁵ While Congress revoked the Commission’s authority to grant licenses via a Pioneer’s Preference, it is less clear whether the Commission could provide accelerated processing of licenses and authorization if an applicant could demonstrate that grant would “make significant contributions to the development of a new telecommunications service or technology” under Section 309(j)(13). TechFreedom urges the Commission to explore this option, and if it determines that Congressional authority is required, to seek such authority from Congress.