

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

In the Matter of)	
)	
Promoting Efficient Use of Spectrum through)	ET Docket No. 22-137
Improved Receiver Interference Immunity)	
Performance)	
)	
)	
)	

**COMMENTS OF THE
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION**

The National Telecommunications and Information Administration (NTIA) hereby comments in response to the Notice of Inquiry (*NOI*) in the above-referenced proceeding.¹ NTIA by statute manages federal government use of spectrum,² advises the President on telecommunications policies,³ presents the Executive Branch’s views on telecommunications

¹ *Promoting Efficient Use of Spectrum through Improved Receiver Interference Immunity Performance*, ET Docket No. 22-137, Notice of Inquiry, 87 FR 29248 (2022). The *NOI* notes that the Commission is “the spectrum manager for non-Federal users” and that the *NOI* does not “seek comment on or address the interagency process between the Commission and NTIA or other Federal agencies on overlapping non-Federal and Federal spectrum management issues.” *NOI*, n.1.

² See 47 U.S.C. § 901(c) (directing NTIA to advance policies that “foster[] full and efficient use of telecommunications resources, including effective use of the radio spectrum by the Federal Government, in a manner which encourages the most beneficial uses thereof in the public interest.”); 47 U.S.C. § 305 (providing that radio stations belonging to and operated by the United States shall use frequencies assigned to each or to each class by the President).

³ 47 U.S.C. § 902(b)(2)(D) (authorizing NTIA “to serve as the President’s principal adviser on telecommunications policies pertaining to the Nation’s economic and technological advancement and to the regulation of the telecommunications industry.”)

policies to the Federal Communications Commission (Commission),⁴ and promotes efficient use of spectrum resources across the federal government, consistent with agency needs and missions.⁵

As receiver performance increasingly is at issue in the management of spectrum, NTIA supports the Commission’s efforts to reopen its proceeding on this important issue.⁶ The NOI raises important technical and policy questions that should benefit from the development of an updated record. NTIA will be reviewing the refreshed record to learn more about the opportunities to improve receiver performance. This includes working with our spectrum management colleagues in other Executive Branch agencies on how best to ensure that systems supporting critical public missions – often involving public safety, national security, and the advancement of science – continue to be protected from harmful interference and that we promote both spectrum efficiency and the mission effectiveness of federal agencies.

The comments we are filing today describe existing efforts by NTIA with respect to receiver performance, including a wide variety of representative requirements and activities that NTIA has implemented or undertaken. In coordination with federal agencies across the Executive Branch, NTIA will continue to carefully consider the many significant issues raised in

⁴ 47 U.S.C. § 902(b)(2)(J) (stating that it is NTIA’s “responsibility to ensure that the views of the executive branch on telecommunications matters are effectively presented to the Commission, and in coordination with the Director of the Office of Management and Budget, to the Congress.”)

⁵ 47 U.S.C. § 902(b)(2)(U) (stating that it is NTIA’s “responsibility to promote the best possible and most efficient use of electromagnetic spectrum resources across the Federal Government, subject to and consistent with the needs and missions of Federal agencies.”)

⁶ The Federal Communications Commission is responsible for licensing authority over non-federal spectrum users. 47 U.S.C. § 301. Frequencies for federal radio stations are assigned by the President, a duty delegated to the Assistant Secretary of Commerce for Communication and Information. 47 U.S.C. § 305(a); 47 U.S.C. § 902(b)(2)(A). As a part of its role overseeing federal spectrum use, NTIA regulates associated receiver standards, as discussed within this document.

the NOI and anticipates developing an Executive Branch position on those issues that considers the views of the various federal agencies and the comments filed in response to the NOI.

As part of NTIA's system certification process, we routinely collect information regarding relevant characteristics of receiver performance, depending on the service and system type.⁷ Thus, for example, agencies requesting certification of land mobile radio systems in the 162-174 MHz and 406.1-420 MHz bands are required to provide information regarding their spurious rejection, adjacent channel rejection, and intermodulation rejection,⁸ and those requesting certification of radar systems are required to provide information regarding radio frequency and intermediate frequency filter selectivity, spurious rejection, and stability.⁹ In many cases, a system's receivers are also required to meet certain performance standards. In some cases, involving land mobile and fixed systems, these standards are identical to those developed by the Telecommunications Industry Association.¹⁰ In other cases, involving radar systems, the standards were developed by NTIA with assistance from the relevant agencies. Appendix A provides a table summarizing these performance requirements. NTIA is currently working with its Interdepartment Radio Advisory Committee to refine the standards and reporting requirements for federal radar systems.

The information that NTIA collects regarding federal receiver performance is used in a variety of ways. NTIA uses the data for fixed systems as part of an automated process that

⁷ See *NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management*, (NTIA Manual) Chapter 5.

⁸ NTIA Manual Section 5.3.6.2 (wide band systems) and Section 5.3.7.3 (narrow band systems).

⁹ NTIA Manual Sections 5.5.7.1-5.5.7.5 depending on the Radar Spectrum Engineering Criteria (RSEC) category.

¹⁰ Telecommunications Industry Association standards TIA-603 (*Land Mobile FM or PM Communications Equipment Measurements and Performance Standards*) for federal land mobile radio (LMR) systems operating in the 162-174 MHz and 406.1-420 MHz.

optimizes frequency assignments. As part of our ongoing efforts at Information Technology Modernization, NTIA plans to extend that automated process to our frequency assignments for other types of federal systems.¹¹ NTIA also uses this data to analyze spectrum sharing opportunities. For instance, as we consider the potential for commercial wireless systems to operate near federal systems, we use the available receiver performance information the agencies have provided in their system certification requests.

NTIA's Institute for Telecommunication Sciences (ITS) has an extensive history in successfully measuring and analyzing receiver performance of radio systems for spectrum sharing and electromagnetic compatibility studies. While the uniqueness of every radio system presents challenges, ITS has developed a suite of measurement techniques, capabilities, and institutional knowledge to characterize receiver performance of many types of systems, including, but not limited to: radars, satellite earth stations, terrestrial communication systems (4G, 5G, xG), and radar-detecting sensors in connection with the Citizens Broadband Radio Service Environmental Sensing Capability networks in the 3.5 GHz band, and Dynamic Frequency Selection technology at 5 GHz.

In addition to NTIA's efforts in this area, various other federal agencies in some cases have their own receiver-focused performance requirements and activities for radio systems that are critical to federal missions.

¹¹ See, Cooper, Charles, "[Plan to Modernize and Automate the Infrastructure of NTIA Related to Managing Federal Spectrum Use](https://www.ntia.gov/report/2021/plan-modernize-and-automate-infrastructure-ntia-related-managing-federal-spectrum-use)," National Telecommunications and Information Administration (September 24, 2021), available at <https://www.ntia.gov/report/2021/plan-modernize-and-automate-infrastructure-ntia-related-managing-federal-spectrum-use>.

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