

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

In the Matter of)	
Revision of Part 15 of the Commission's Rules to)	ET Docket No. 13-49
Permit Unlicensed National Information)	
Infrastructure (U-NII) Devices in the 5 GHz Band)	

**REPLY COMMENTS OF
THE NATIONAL ASSOCIATION OF BROADCASTERS**

I. Introduction

The National Association of Broadcasters (NAB)¹ hereby files reply comments in this proceeding in which the Commission proposes to amend Part 15 of its rules governing the operation of Unlicensed National Information Infrastructure (U-NII) devices and make available an additional 195 megahertz of spectrum for unlicensed use in the 5 GHz band.² In our initial comments, we expressed broadcasters' strong concerns that the introduction of more U-NII devices in the 5 GHz band – especially the 5.35-5.47 GHz or U-NII-2B band – could cause unacceptable levels of interference to incumbent broadcast weather radar systems that provide up-to-the-minute information to the public on severe weather conditions.³ We also noted that adequate safeguards – including dynamic frequency

¹ NAB is a nonprofit trade association that advocates on behalf of local radio and television stations and broadcast networks before Congress, the Federal Communications Commission (FCC or the Commission) and other federal agencies, and the courts.

² See Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, *Notice of Proposed Rulemaking*, ET Docket No. 13-49, released Feb. 20, 2013 ("Notice").

³ See Comments of the National Association of Broadcasters in ET Docket No. 13-49, at 1-2 (filed May 28, 2013).

sensing, a geolocation/database solution, and improved in-device software security – must be considered by the Commission to protect incumbent users of the band.⁴ Based on our review of the record, NAB continues to believe that with the right set of protections, U-NII devices can share the band with broadcasters and other users. The Commission, however, will need to take appropriate steps to ensure U-NII devices do not cause interference to critical services, like broadcast weather radar, that provide potentially life-saving information directly to the public.

II. The Record Supports Enhance Interference Avoidance Requirements for U-NII Devices

Many commenters agree that U-NII devices should include technologies that can, in one way or another, sense and avoid primary services in the band.⁵ In our initial comments, we suggested that requirements designed to protect Terminal Doppler Weather Radar (TDWR) systems be extended to the proposed U-NII-2B band, where many broadcast weather systems operate.⁶ This extension makes sense because, like TDWRs, broadcast weather radar systems are very sensitive to interference and serve a public safety purpose.⁷ The documented interference caused by U-NII devices to TDWR systems illustrates broadcaster concerns. NAB also has been apprised by several stations of existing interference to their weather radar systems, including some cases that are under

⁴ *Id.* at 2-8.

⁵ See, e.g., Comments of The Wireless Internet Service Providers in ET Docket No. 13-49, at 7 (filed May 28, 2013); see also, Comments of the Shared Spectrum Company in ET Docket No. 13-49, at 5 (filed May 28, 2013).

⁶ See NAB Comments at 2.

⁷ See Comments of Baron Services, Inc. in ET Docket No. 13-49, at 6-7 (filed May 28, 2013) (citing Department of Commerce, *Effects of RF Interference on Radar Receivers*, NTIA Technical Report TR-06-444 (rel. Sept. 2006)).

investigation by FCC field operations. As the Notice concedes, while many of the U-NII devices causing interference to TDWR systems were either illegally modified by the user or otherwise non-compliant, several others were operating correctly but either still caused interference to or failed to detect the weather radar systems.⁸ We agree with the Notice that “[such] interference is unacceptable and must be eliminated.” *Id.*

The question, then, is *how* to avoid such interference. Some supporters of putting more U-NII devices into the 5 GHz band want to rely only on sensing to protect primary users in the band.⁹ Motorola Solutions, for example, argues that “there is no evidence DFS (dynamic frequency sensing), when used correctly, has been ineffective at protecting incumbent users from harmful interference,”¹⁰ and opposes mandating “the use of additional interference avoidance techniques, such as geo-location technologies combined with database registration.”¹¹

NAB remains concerned that sensing safeguards are not up to the task. As shown by a recent report from the National Telecommunications and Information Administration (NTIA) sensing technologies alone are not necessarily effective. Sensing technologies, like those currently employed by U-NII devices operating in the 5250-5350 MHz and 5470-5725 MHz bands, are “highly dependent on the transmission characteristics of the U-NII

⁸ See Notice at 43.

⁹ See, e.g., Comments of the Wi-Fi Alliance in ET Docket No. 13-49, at 32-33 (filed May 28, 2013) (“Wi-Fi Alliance does not believe that mandatory use of geo-location, sensing or database technologies are necessary to protect incumbent users.”).

¹⁰ Comments of Motorola Solutions, Inc., in ET Docket No. 13-49, at 6 (filed May 28, 2013). *see also* Wi-Fi Alliance Comments at 33 (“When properly configured, DFS protects incumbents operating in the U-NII bands.”).

¹¹ Motorola Solutions Comments at 6.

devices and the parameters defining the radar signals. Any changes to the radar signal ... or U-NII device transmission characteristics could impact the detection capabilities of the U-NII devices and increase the potential for interference.”¹² NTIA’s report identifies several other risks to radar systems in the 5350-5470 MHz band (the U-NII-2B band of specific concern to broadcasters). For example, NTIA suggests that DFS protection parameters may not be able to detect future radar systems, that U-NII devices can cause harmful adjacent channel interference, and that even low levels of interference can be harmful to radar systems.¹³ While NTIA has not yet recommended interference avoidance criteria for U-NII devices in the 5350-5470 MHz band, the report did conclude that further analysis would be required to determine if additional safeguards are necessary.¹⁴ The Commission should not finalize new rules for these bands without further coordination with NTIA.

The Commission’s own experience with TDWR’s has shown, sensing technologies alone, while effective much of the time, have not prevented some occurrences of harmful interference, even when the device was functioning properly.¹⁵ Additional safeguards therefore must be considered, including a geo-location/database solution and software security that prevents users from improperly modifying U-NII devices.

¹² Department of Commerce, *Evaluation of the 5350-5470 MHz and 5850-5925 MHz Bands Pursuant to Section 6406(b) of the Middle Class Tax Relief and Job Creation Act of 2012*, p. 4-7 (Jan. 2013) (“NTIA 5 GHz Report”).

¹³ *Id.* at 4-9 to 4-11.

¹⁴ *Id.* at ii.

¹⁵ See NTIA 5 GHz Report at 3-4.

Opponents of additional interference avoidance mandates cite one primary reason for not including additional safeguards in U-NII devices – cost.¹⁶ NAB does not suggest the Commission create unnecessary or over-burdensome technical mandates for U-NII devices. Several commenters have noted that a geo-location/database solution to protect incumbent radar could be implemented at little additional cost to each device, especially because incumbent public safety radar systems, like broadcast weather radar, are stationary and limited in number.¹⁷ The benefit of preventing harmful interference to services providing vital information to the public thus may well outweigh the limited cost of such interference avoidance techniques. We look forward to working with the Commission in its consideration of these important issues.

¹⁶ See, e.g., Comments of Ericsson in ET Docket No. 13-49, at fn. 6 (filed May 28, 2013); see also, Comments of Comcast Corp. in ET Docket No. 13-49, at 22 (filed May 28, 2013).

¹⁷ See Comments of Motorola Mobility LLC in ET Docket No. 13-49, at 7 (filed May 28, 2013); see also Comments of Google Inc. and Microsoft Corp in ET Docket No 13-49, at 8 (filed May 28, 2013); Motorola Solutions Comments at 6.

III. Conclusion

To ensure citizens receive timely and accurate weather information, we ask the Commission to implement new rules for U-NII devices that carefully balance both the needs of the unlicensed community and the need to protect broadcast weather radar systems from harmful interference.

Respectfully submitted,



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