

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

In the Matter of)
)
Amendment of the Commission’s Rules with) GN Docket No. 13-185
Regard to Commercial Operations in the 1695-)
1710 MHz, 1755-1780 MHz, and 2155-2180 MHz)
Bands)

REPLY TO OPPOSITION

Trimble Navigation Limited and Deere & Company (together, the “Petitioners”), hereby reply to the CTIA - The Wireless Association (“CTIA”) opposition¹ (“Opposition”) to their Petition for Reconsideration² (“Petition”) in the above-captioned matter.³ At the outset, the Petitioners reiterate their support for the Federal Communications Commission’s (“Commission’s”) ongoing efforts to make additional spectrum available to meet demand for wireless broadband services and do not seek to interpose any delay in the auction of Advanced Wireless Service (“AWS-3”) spectrum. However, sound spectrum management policies – what the Petitioners seek here – are also a part of the effort. The Commission should therefore update its technical rules to more accurately reflect the changing spectrum environment including the exponential increase of the number of radiofrequency transmitters in use over the past decade. Technical rules adopted prior to this proliferation must be revisited to ensure, among other things, that emission levels into adjacent bands – a step that addresses an important long-term goal needed to maintain efficient use of a finite natural resource – remain appropriate.

¹ See Opposition of CTIA - The Wireless Association to Petition for Reconsideration, GN Docket No. 13-185 (Aug. 21, 2014) (“*Opposition*”).

² See Petition for Reconsideration of Trimble Navigation Limited and Deere & Company, GN Docket No. 13-185 (Jul. 7, 2014) (“*Petition*”).

³ See *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Report and Order, GN Docket No. 13-185, FCC 14-31, ¶ 19 (rel. Mar. 31, 2014) (“*Report and Order*”).

I. The Record Reflects New Evidence that the Commission's Rules Are Out of Date

CTIA urges the Commission to disregard the Petition, arguing that all issues were previously raised and addressed.⁴ This is incorrect. Both the FCC's decision and CTIA ignore a fundamental point that the GPS Innovation Alliance ("GPSIA") made in this proceeding, which when properly taken into account, requires reconsideration of the FCC's decision. All available evidence suggests that cellular handsets greatly outperform the outdated out-of-band emission ("OOBE") limits that still appear in the FCC rules.⁵ Because the FCC did not address this issue, its decision must be reconsidered.

Both the FCC's decision, and the Opposition argue that the current $43+10\log(P)$ OOBE limit appears to be appropriate because cellular handsets enabled with GPS receivers do not experience self-interference and concludes that the old $43+10\log(P)$ OOBE limit is an adequate technical standard. However, the Opposition draws the wrong conclusion from its premise. Little interference exists because the designers of already manufactured and fielded handsets intentionally apply *a more rigorous standard* in order to avoid creating harmful self-interference.⁶ This discrepancy was confirmed at the Commission's recent workshop discussing GPS protection and receiver performance.⁷

⁴ *Opposition* at 1.

⁵ *See Petition* at 3, citing to statements of Chris Helzer, *Workshop on GPS Protection and Receiver Performance*, at 5-7 (June 20, 2014), available at http://transition.fcc.gov/oet/prd/GPS-WORKSHOP_6-20-14/PANEL_2/2-1_Helzer_FCC.pdf ("Helzer Statement"); Letter from F. Michael Swiek, Executive Director, U.S. GPS Industry Council, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 12-70, *et al.*, at 2 (filed Nov. 8, 2012) ("USGIC Letter") (explaining that "[t]he reason there have been no reported instances of interference is that terrestrial mobile broadband systems operate at levels substantially below [FCC OOBE] limits").

⁶ There could many reasons why such devices do not experience self-interference, including reasons unrelated to the level of OOBE. For example, handsets may be designed to mute transmissions altogether when the GPS feature is in use. Alternatively, it is also possible that the relevant handset manufacturer holds its handsets to a higher internal standard for OOBE.

⁷ *See Helzer Statement*.

In an effort to dissuade the Commission from revisiting the outdated OOB limit, CTIA also asserts that no “harmonics issue” exists for AWS-3 transmitters into GPS/RNSS bands.⁸ The Petitioners remind the Commission that harmonics issues have gone undetected before, and have only been identified after a significant volume of equipment has become operational and placed into the field.⁹ Accordingly, any conclusions regarding harmonics are premature.

II. Sound Principles of Spectrum Management Warrant Reconsideration

Given the importance of the OOB issue to spectrum users in multiple services, prudent principles of spectrum management dictate that the Commission undertake a review of the standard to develop an updated limit that will match the OOB performance of well-designed contemporary handsets. In several instances, the Opposition suggests that revisiting OOB limits for future AWS-3 devices is solely a GPS interference issue.¹⁰ The Petitioners disagree. Revisiting OOB protection criteria is about sound spectrum management. Having a standard (*i.e.*, $43+10\log(P)$ OOB limit) that allows greater emissions than current industry norms is an invitation for an industry outlier, in order to cut production cost or for other reasons, to manufacture underperforming handsets that will cause harmful interference and result in an elevated noise floor without Commission recourse. Further, maintaining a lax emission mask “on the books” undermines the Commission’s ongoing effort to demand greater spectral efficiency where possible, in order to promote more intense spectrum use.¹¹

⁸ *Opposition* at 5.

⁹ *See, e.g., In re Highway Information Systems Equipment Certification for Traveler's Advisory Transmitter, Memorandum, Opinion and Order*, 17 FCC Rcd 4027 (2002). It is also unclear if the Opposition is referring solely to the 1559-1610 MHz RNSS band with respect to harmonics, or all potentially affected RNSS bands.

¹⁰ *See Opposition* at 5 (arguing that “there is no need for the Commission to diverge from its usual technical rules to protect GPS”); *see also Id.* at 1 (stating that CTIA “continues to believe that the framework proposed and adopted by the Commission is sufficient to protect GPS operation”).

¹¹ *See, e.g., Workshop on Spectrum Efficiency and Receiver Performance, Public Notice, DA 12-378* at 1 (March 9, 2012) (clarifying the Commission position that “[n]ew approaches to spectrum management focusing on

III. The Commission Cannot Rely on Voluntary Industry Standards to Protect Users in Other Bands from Interference

The Opposition also wrongly argues that “issues raised by GPS stakeholders in this proceeding are properly addressed in open working groups and the industry process.”¹² Because it is ultimately the Commission’s role to modify existing rules that govern OOB limits, the Commission must take the lead in considering those limits. The evaluation of this issue outside of usual Commission processes would be problematic. For example, wireless industry standards setting bodies – where this issue might be considered -- are designed to maximize the flow of high integrity data and the performance of wireless communications devices, not necessarily for the protection of unrelated services. A Commission-driven proceeding where all parties’ interests can be identified and protected is a better approach.

spectrum efficiency and receiver performance may enable more assured deployment of new services and reduce the necessity for the involvement of regulators).”

¹² *Opposition* at 5.

IV. Conclusion

For the reasons discussed above, the Petitioners respectfully request that the Commission dismiss the Opposition and proceed with a fulsome examination of OOB limits for future AWS-3 devices. The present limit is not consistent with current technology.

Respectfully submitted,

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September 2, 2014

CERTIFICATE OF SERVICE

I, Timothy L. Bransford, hereby certify that on September 2, 2014, I have caused a copy of the Reply of Trimble Navigation Limited and Deere & Company to be served via U.S. Mail on the following:

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