

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

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

**COMMENTS OF FREEWAVE TECHNOLOGIES, INC.  
IN SUPPORT OF PETITIONS FOR RECONSIDERATION**

FreeWave Technologies, Inc. (“FreeWave”), by its attorneys, hereby files in support of the Petitions for Reconsideration (“Petitions”)<sup>1</sup> that have been filed in response to the Federal Communications Commission’s (“FCC” or “Commission”) decision to adopt more restrictive Out-of-Band Emissions (“OOBE”) requirements for the 5725-5850 MHz band in the *First Report and Order* of this proceeding.<sup>2</sup> The new OOBE limits will inhibit FreeWave’s customers, many of whom engage in mission-critical operations, from using the 5.8 GHz band with full effect, especially for the backhaul of data at long distances.

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<sup>1</sup> Petition for Partial Reconsideration of the Wireless Internet Service Providers Association, ET Docket No. 13-49 (June 2, 2014) (“WISPA Petition”); Petition for Reconsideration of Cambium Networks, Ltd, ET Docket No. 13-49 (June 2, 2014) (“Cambium Petition”); Mimosa Networks, Inc. Petition for Partial Reconsideration, ET Docket No. 13-49 (June 2, 2014) (“Mimosa Petition”); and Petition for Partial Reconsideration of the JAB Wireless, Inc., ET Docket No. 13-49 (June 2, 2014) (“JAB Petition”).

<sup>2</sup> *In the Matter of Revision of Part 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, First Report and Order, ET Docket No. 13-49 (rel. April 1, 2014) (“*First R&O*”).

## STATEMENT OF INTEREST

FreeWave manufactures more than 100 different radio products, contained on more than ten platforms and designed to operate in bands ranging from VHF to 5.8 GHz. In particular to this proceeding, FreeWave provides WavePoint® for use in the 5.8 GHz band, a comprehensive and versatile wireless M2M communications architecture that delivers secure, end-to-end, wired and wireless communications. WavePoint® is a powerful solution for organizations that have multiple and often remote locations where fast, secure, and reliable wireless connectivity between these sites and the back office is critical. For example, WavePoint® provides Wi-Fi connectivity and optional 3G backhaul to allow field personnel to conveniently access information from remote locations, troubleshoot and repair problems, and perform critical tasks.

FreeWave primarily markets WavePoint® to the oil & gas industry, utilities, military users, the agriculture and mining industries, municipal governments, and enterprise users. Thus, WavePoint® is used in a large number of mission-critical applications, *i.e.* monitoring volcanic and seismic activity to provide early warnings; collecting data for oil and natural gas wells; monitoring and controlling pipelines, which are a critical part of the infrastructure of this country; providing critical information on clean water systems that supply drinking water to most metropolitan cities in the U.S.; implementing smart traffic systems that control the timing of traffic lights and the flow of traffic in metropolitan areas around the country; and monitoring electric substations, which is critical to the electric power grid. Furthermore, most of these applications occur in remote areas. For example, oil and gas formations are never close, as wellheads and pipelines are usually located in remote, nearly inaccessible areas, including in the desert, on high plains, on or under arctic tundra, or offshore. These are typically places that lack good road access, and are located far from maintenance teams and production operations centers.

For these reasons, it is vital that these users continue to have access to FreeWave's WavePoint® system. These radios provide high bandwidth backhaul communications for multiple sites and, if subject to the more stringent OOB emissions, the radios will not be able to, in a cost-feasible manner, reach the remote areas from which customers require that these radios operate. This rule change could well hinder such users from making fully effective use of the radio spectrum.

## DISCUSSION

FreeWave supports the Petitions seeking reconsideration of the Commission's determination to eliminate the Section 15.247 OOB requirements for the 5725-5850 MHz band and to apply the more restrictive Section 15.407 requirements.<sup>3</sup> Until now, Section 15.247 allowed digitally modulated radios operating in 5.8 GHz to meet OOB requirements of 20 dB of attenuation.<sup>4</sup> However, Section 15.407 imposes more restrictive OOB requirements – below -17 dBm/MHz within 10 MHz of band edge and below -27 dBm/MHz beyond 10 MHz of the band edge.<sup>5</sup>

Absent reconsideration of this rule change, FreeWave's customers would lose use of the edge channels on which the radios operate, as the amount of power that would need to be reduced in order to meet the OOB requirements would render them useless. Additionally, given typical antenna gain employed, FreeWave's customers would also incur a reduction in power on other channels, limiting throughput and reducing their ability to use the radios for applications such as video surveillance for the monitoring of their remote sites.

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<sup>3</sup> See 47 C.F.R. § § 15.247 and 15.407.

<sup>4</sup> 47 C.F.R. § 15.247.

<sup>5</sup> 47 C.F.R. § 15.407.

## CONCLUSION

Based on FreeWave's several decades of experience manufacturing radios that operate using unlicensed spectrum, its view is that this change in OOB limits would be particularly harmful to the mission-critical users of unlicensed spectrum. For these reasons, FreeWave supports the Petitions for Reconsiderations, and respectfully requests that the Commission reconsider its decision to impose the Section 15.407 OOB requirements for all devices operating in the 5.8 GHz U-NII band.

Respectfully submitted,

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Certificate of Service

I, Deborah Wiggins, hereby certify that on this 14th day of August, 2014, I served a copy of the foregoing Comments of FreeWave Technologies, Inc. in Support of Petitions for Reconsideration, by U.S. mail, postage pre-paid, on the following:

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