

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Parts 1, 2, 22, 24, 27, 90 and)	WT Docket No. 10-4
95 of the Commission’s Rules to Improve)	
Wireless Coverage Through the Use of Signal)	
Boosters)	

COMMENTS OF NEXTIVITY, INC.

Nextivity, Inc. (“Nextivity”), by its undersigned counsel, hereby submits these comments in response to the Commission’s Further Notice of Proposed Rulemaking in the above-captioned docket.¹ As set forth in other filings in this proceeding, Nextivity is a U.S.-based leader in the development of advanced booster technology. Nextivity urges the Commission to eliminate the “personal use” restriction currently in the rules as it applies to Provider-Specific Consumer Signal Boosters. The “personal use” restriction for Provider-Specific Consumer Signal Boosters serves no regulatory or technical purpose and only stands as an unnecessary roadblock to further deployment of a cost-efficient and non-interfering technology that expands our nation’s wireless coverage.

¹ *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission’s Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Order on Reconsideration and Further Notice of Proposed Rulemaking, WT Docket No. 10-4, FCC 14-138 (rel. Sept. 23, 2014).

I. The Personal Use Restriction as Applied to Provider-Specific Consumer Signal Boosters is Overbroad and Should be Eliminated

The Commission opened this proceeding in 2010 to promote the development and deployment of well-designed signal boosters as an important way of covering gaps in wireless service that exist within and at the edge of cellular service areas.² The Commission further recognized the special public interest role that signal boosters play by making possible robust cellular signals in “rural and difficult-to-serve indoor environments, such as hospitals” as well as enabling the public to connect to 911 where coverage is deficient.³ The Commission stated that “because signal boosters represent a cost-effective means of improving our nation’s wireless infrastructure, the rules we adopt today should lead to more robust service for many Americans at home, at work, and on the road.”⁴

In developing the rules, the Commission weighed the objectives to promote deployment of mobile voice and broadband services throughout the United States, encourage technological advances, and foster a robust, competitive market for booster technology against the important need to ensure that there are “sufficient safeguards to mitigate interference to wireless networks.”⁵ Accordingly, the signal booster rules create different categories of signal boosters

² *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission’s Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Notice of Proposed Rulemaking, 26 FCC Rcd 5490, ¶ 106 (Apr. 6, 2011) (granting in part and denying in part the three petitions for rulemaking). The Commission initiated this proceeding in January 2010 by issuing a Public Notice seeking comment on a number of petitions that sought changes to the rules for signal boosters. See *Wireless Telecommunications Bureau Seeks Comment on Petitions Regarding the Use of Signal Boosters and Other Signal Amplification Techniques Used With Wireless Services*, Public Notice, 25 FCC Rcd 68 (Jan. 6, 2010).

³ *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission’s Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Report and Order, 28 FCC Rcd 01663, ¶ 2 (Feb. 20, 2013) (“Order”).

⁴ *Order*, at ¶ 2.

⁵ *Order*, at ¶ 2.

(Consumer and Industrial) and impose tight regulatory controls on Consumer boosters to reduce their potential interference to wireless networks.⁶ The rules further differentiate between Wideband Consumer Signal Boosters, devices designed to operate on the frequencies and in the market areas of multiple licensees,⁷ and Provider-Specific Consumer Signal Boosters, devices that can only operate on the frequencies and in the market areas of the licensees specified during the equipment certification of the device.⁸ Distinct technical specifications apply to Wideband and Provider-Specific Consumer Signal Boosters.⁹ The rules ensure that carriers maintain control over Consumer Boosters by requiring manufacturers (and users) to abide by specific technical requirements and consumers to obtain consent from their carriers to use a signal booster.

For Provider-Specific Consumer Signal Boosters, the carrier consent process is incorporated into the equipment certification process. That process starts with the consent of the license holder for the manufacturer to seek equipment certification from the Commission. Prior to applying to the Commission, the manufacturer and license holder typically engage in extensive negotiations and testing to establish a set of operating rules as well as device operating

⁶ Industrial Boosters are devices that are designed to be installed by licensees or qualified installers, and include large high-powered devices intended for professional or enterprise use. They tend to have more expansive functionality, *e.g.*, remote monitoring and controls, higher output power and gain, and are designed to serve multiple users simultaneously and cover larger areas such as stadiums, shopping malls, tunnels and campuses. The larger scale and scope of these devices requires installations to be coordinated by the installer with the wireless provider being served by the booster in order to avoid interference with wireless networks. *Order*, at ¶ 17.

⁷ *Order*, at ¶ 72. The Commission stated that “[b]ecause Wideband Consumer Signal Boosters operate across multiple bands and in spectrum licensed to multiple wireless providers, these devices require tight technical specifications to ensure that they do not cause harmful interference in adjacent bands.” *Id.*

⁸ *See Order*, at ¶ 73. Accordingly, equipment certification applications must include a certification that the applicant has received the consent of the relevant licensee to manufacture the device. *Id.*, at ¶ 74.

⁹ *See Order*, at ¶ 72.

points that are acceptable to the license holder. These operating procedures and rules vary from operator to operator and are designed to reflect the license holder's agreement that the parameters are consistent with the provider's strategy and will prevent interference to the wireless network. Once those parameters are established, the license holder authorizes the manufacturer to represent in the equipment certification application that the license holder has provided consent to the Provider-Specific Consumer Signal Booster.

The "personal use" restriction was put in place to prevent a situation in which multiple unrelated users would use a Consumer Signal Booster registered with one carrier but not with all the carriers whose signals are being boosted. If a consumer registers a Wideband Signal Booster with her service provider and properly operates it in her home or car, for instance, the signal booster will only be operated on that provider's spectrum. The "personal use" restriction would prevent a situation, for example, in which the owner of a public coffeehouse registers a Consumer Booster with its business line carrier, and provides access to patrons who would be able to use it for service provided by their own carriers even though those carriers' consent had not been obtained through the device registration process. In this way, the "personal use" restriction is meant to ensure that the signal booster is not normally used in an unauthorized fashion on another provider's spectrum.

While the "personal use" restriction prevents a Wideband Consumer Signal Booster from being used on a carrier's spectrum without authorization, the use of a Provider-Specific Consumer Signal Booster does not raise the same risk and does not require such a safeguard. As required by the Commission's rules and implemented in the equipment certification process, Provider-Specific Consumer Signal Boosters can only be used with an appropriate carrier

registration and therefore the carrier always retains control over the Provider-Specific Consumer Signal Booster.

Accordingly, the existing “personal use” rule is overbroad as it applies to Provider-Specific Consumer signal boosters. In no instance can a Provider-Specific Consumer Signal Booster be used to operate on spectrum without the carrier’s consent. Thus, there is no regulatory policy or technical reason to preclude the use of Provider-Specific Consumer Signal Boosters for non-personal uses, such as in a small business context.

II. Eliminating the “Personal Use” Restriction as Applied to Provider-Specific Consumer Signal Boosters Would Serve the Public Interest

Nextivity submits that the public interest would be served by removal of the “personal use” restriction for Provider-Specific Consumer Signal Booster use. Provider-Specific Consumer Signal Boosters can solve significant coverage problems without raising any interference concerns. Real world examples include a small business document solutions company that has one office located on the ground floor of a high rise building in downtown San Diego. Signal in this area is weak due to the construction of the building and the positioning of the office partially below street level. T-Mobile installed a Cel-Fi Provider-Specific Consumer Signal Booster device in the manager’s office and now the carrier’s 4G signal is fully available throughout the 2,000 square ft. location. In another example, a medical device company that had access to very strong signals outside its building but only weak signals inside the very heavily stocked warehouse building required a coverage solution. Installing a Provider-Specific Consumer Signal Booster unit inside this warehouse provided 3-5 bars of LTE coverage

throughout the 5,000 square ft. location. Management and warehouse employees were impressed that such a small device could change their coverage so much.

Examples of such deployments are not limited to the United States. Providers in Canada, for example, regularly use Cel-Fi Provider-Specific Consumer Signal Boosters to overcome path loss and improve signals for small business owners. In France, Orange has a well-publicized program to offer Provider-Specific Consumer Signal Boosters to small businesses to solve coverage issues (<http://boutiquepro.orange.fr/telephone-mobile-couverture-site-initiale.html>).

While there are significant public interest benefits to eliminating the personal use restriction for Provider-Specific Consumer Signal Boosters, there are significant disadvantages to maintaining the restriction. Specifically, maintaining the restriction significantly hampers the ability of the vast network of value-added resellers of consumer signal boosters in the United States to address the coverage issues of small businesses. These businesses typically have less than ten (10) people in an office and very often have coverage problems only on a single network. Should this restriction remain in place, these enterprises will have very little recourse to improve their coverage.

Small businesses require access to mobile services to compete.¹⁰ Maintaining an arbitrary and unnecessary prohibition on enterprise use of Provider-Specific Consumer Signal

¹⁰ See Sara Angels, *Why Small Business Can't Ignore Mobile Technology*, Business News Daily (June 23, 2014), available at <http://www.businessnewsdaily.com/6647-mobile-technology-smb.html>. A 2014 AT&T and Small Business & Entrepreneurship Council poll found that “millions of small businesses are tapping into technology to save time and money - to the tune of \$67.5 billion a year” See *AT&T Small Business Technology Poll 2014*, <http://about.att.com/mediakit/2014techpoll> (last visited Dec. 28, 2014). That survey found that most small businesses believe that mobile devices, particularly smartphones, are providing their business a competitive advantage. See *id.* Smartphone device use by small businesses is increasing -- 94% of small businesses rely on smartphones as opposed to 85% in 2013. See *id.*

Boosters denies a significant segment of the American business sector from fully participating in the nation's wireless transformation. Further, the prohibition disproportionality penalizes small business users in rural and edge areas and dense urban environments where wireless coverage is especially challenged. It is also important to recognize that the Commission's market restriction has a chilling effect on the availability of financial and other important resources that innovative equipment developers need to continue pursuing important development. Such barriers to innovation do not serve the interests of consumers, manufacturers, or the broader public interest.¹¹

The Commission recognized from the outset the significance of enabling this technology; while mobile voice and data services are extensively deployed in the United States, significant coverage gaps still exist and continue to pose problems for residents, businesses, public institutions, visitors, and public safety responders, particularly in rural areas. Nextivity submits that these and other advanced wireless access technologies are crucial elements in the rapidly evolving connected home, enterprise and mobile applications. The widespread availability of such access technologies -- including in an enterprise context -- is key to ensuring that the nations' wireless networks and scarce spectrum resources are being used as efficiently as possible as the country and affected industries struggle to meet the soaring consumer, business

¹¹ Eliminating the rule would not impose costs on consumers or manufacturers. From a regulatory cost point of view, vendors would follow the exact same process as they are following now with exactly the same product. Hence such a rule change would be cost neutral.

