

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

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

**REPLY COMMENTS OF CINCINNATI BELL WIRELESS LLC**

Jouett K. Brenzel  
221 E. Fourth Street, 103-1280  
Cincinnati, OH 45202  
Tel: (513) 397-7260  
Email: jouett.brenzel@cinbell.com

Attorney for Cincinnati Bell Wireless LLC

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

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

**REPLY COMMENTS OF CINCINNATI BELL WIRELESS LLC**

Cincinnati Bell Wireless LLC (“CBW”) hereby submits these reply comments in response to comments and proposals filed by various parties in the above-captioned proceeding.<sup>1</sup> Like other wireless licensees and as set forth herein, CBW supports the Commission’s efforts to develop a regulatory framework by which individuals and businesses can deploy well-designed, non-interfering signal boosters to improve wireless coverage. In addition to adopting appropriate technical requirements to mitigate the potential for interference, however, CBW maintains that the Commission must affirm that signal boosters may only be permitted with the consent and under the control of a licensee, which must have the ability to locate and shut down any signal booster causing network interference. CBW also asserts that the Commission must develop a method by which all carriers whose networks may be affected by a signal booster can obtain registration information so that they, too, can address or shut down a booster found to interfere with their networks.

As set forth herein, CBW generally supports the framework and technical specifications outlined in the joint proposal submitted by Verizon Wireless and Wilson Electronics (“Joint Proposal”). However, CBW recommends modifications to the Joint Proposal that it believes are

---

<sup>1</sup> 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, WT Docket No. 10-4, *Notice of Proposed Rulemaking*, FCC 11-53 (rel. April 6, 2011).

necessary to ensure that all licensees operating in the frequency bands affected by the signal booster have access to sufficient information to locate and shut down any booster causing harmful interference.

## **REPLY COMMENTS**

Like other wireless carriers, CBW has found that the unauthorized operation of signal boosters harms the operation of its wireless network and hampers its ability to manage interference caused by improperly installed and/or malfunctioning signal boosters.<sup>2</sup> Based on the significant resources it has expended in dealing with interference from unauthorized, poorly designed and/or malfunctioning signal boosters, CBW maintains that boosters must be operated with the consent and under the control of a licensee so that the carrier has the means necessary to locate an interfering booster, to work with the operator to address such interference and, when necessary, to shut down a interfering booster. As described further below, CBW also contends that in addition to the host carrier, other wireless carriers whose networks may be affected by a signal booster must have access to the information by which to locate and address signal boosters causing harmful interference to their networks.

Because CBW believes that the Joint Proposal addresses many of its concerns about the operation of signal boosters by consumers and businesses, CBW generally supports the framework (i.e. the division of signal boosters into three distinct categories) and technical specifications (e.g., power limits, antenna requirements, emissions limits, automatic gain control, and anti-oscillation protection, etc.) propounded in the Joint Proposal.<sup>3</sup> Based on its review of

---

<sup>2</sup> See Wireless Telecommunications Bureau Public Notice Regarding the Use of Signal Boosters and Other Signal Amplification Techniques Used With Wireless Services, Dkt. No. 10-4, Reply Comments of CBW at 2-3.

<sup>3</sup> The only exception to CBW's support of the technical specifications set forth in the Joint Proposal deals with Uplink Power Off Mode (Uplink Squelch). Specifically, CBW is not aware of any technical basis for the 15 minute time period specified in the Joint Proposal and would recommend a time period as short

the technical specifications for Consumer Boosters, specifically, CBW believes they are sufficient to mitigate the potential for interference caused poorly designed and/or improperly installed signal boosters in the first instance. However, with respect to Consumer Boosters, CBW contends that the Joint Proposal suffers from at least two major deficiencies which must be addressed—1) the reliance on self-registration by consumers and 2) the apparently limited scope of the registration requirement to only the carrier whose signal is intended to be amplified, i.e. the host carrier.

First, CBW supports a registration requirement generally, and CBW agrees with Verizon/Wilson and others who recommend that end users who purchase consumer-grade signal boosters from third parties must be required to register the signal booster with the end user's host carrier. Nonetheless, CBW does not believe that the registration requirement set forth in the Joint Proposal is sufficient in that it relies upon the end user to self-register, and there is no way to prevent a booster from being placed into operation before the end user completes the registration process. For that reason, CBW supports the recommendation made by T-Mobile USA, Inc. ("T-Mobile) that signal boosters should be designed so that they cannot operate at all until they have been registered with the host carrier.<sup>4</sup> Such a technical requirement would ensure that the host carrier has sufficient information to locate a signal booster if and when it recognizes interference to the network, to work with the operator to address such interference and, when necessary, to shut down the booster if interference cannot be eliminated. Such a prerequisite would also allow carriers to verify that the correct spectrum is being amplified, an issue which is particularly important for CBW which operates its GSM network using both the A and E Blocks in the 1900 MHz band. If the booster operates on one block but not the other, service to the

---

as can be implemented with the proposed technology without impacting the design of a booster. CBW believes a timeframe of 5 minutes or less is feasible.

<sup>4</sup> T-Mobile comments at 8.

customer who installed the booster as well as other users nearby will be affected. Thus, CBW must verify that the booster is capable of working on its network frequency plan before consenting to its activation by the end user.

CBW also supports the development of an automated means of registration which eliminates the reliance on end users to affirmatively register a booster. Thus, to the extent that the alternative Bluetooth registration process outlined in the Joint Proposal achieves that purpose, CBW supports it conceptually but would require additional details before supporting it fully. As discussed below, CBW believes that the Bluetooth alternative may suffer from the second major deficiency CBW has identified with respect to the Joint Proposal in that such an approach appears to notify only the host carrier but not other carriers whose frequency bands may also be affected by the booster.

Unfortunately, in CBW's opinion, both self registering with the host carrier and the Bluetooth alternative outlined in the Joint Proposal suffer from the same major deficiency. Specifically, neither form of registration addresses the harmful interference that can be caused to *other* carriers whose networks may be affected, perhaps unintentionally, by a signal booster registered with the host carrier. In addition to the host carrier, whose service coverage is intended to be amplified by the end user, signal boosters often affect the networks of other wireless carriers who operate in the same frequency bands. For instance, CBW and T-Mobile operate in the same frequency bands in Greater Cincinnati such that a booster operated by a subscriber of one of the carriers may unintentionally interfere with the network of the other carrier. Thus, registration with the host carrier alone is inadequate to ensure that other carriers on the same frequency bands have sufficient information to locate, address interference with the operator and, if necessary, shut down a booster causing interference.

To resolve this information gap, CBW asserts that the Commission must develop a method by which all carriers can obtain information about all signal boosters located in their licensed areas so that they, too, can address and/or shut down a booster causing interference. Thus, CBT supports the creation of a national signal booster clearinghouse to which all signal booster registrations made with individual host carriers must be forwarded. CBW further supports the use of the clearinghouse for the purposes suggested by T-Mobile.<sup>5</sup>

Finally, CBW supports the two-step approach recommended by Verizon Wireless with respect to the continued use of existing signal boosters which do not conform to the technical specifications adopted as part of this proceeding.<sup>6</sup> Specifically, CBW supports a requirement that operators must register existing boosters with host carriers within sixty (60) days of the effective date of the new rules and must replace any non-conforming booster with one that meets the new requirements or otherwise bring the non-conforming booster into compliance within one year of the effective date of the new rules.

## **CONCLUSION**

For the forgoing reasons, CBW requests that the Commission adopt appropriate technical specifications, as outlined in the Joint Proposal, to mitigate the potential for interference by signal boosters and affirm that signal boosters may only be permitted with the consent and under the control of a licensee, which must have the ability to locate and shut down any signal booster causing network interference. Further, CBW requests that the Commission develop a method by which all carriers whose networks may be affected by a signal booster can obtain registration

---

<sup>5</sup> See T-Mobile Comments at 9 which discusses the use of a clearinghouse for sharing and tracking interference information regarding certain signal booster models and the establishment of complaint thresholds.

<sup>6</sup> Verizon Wireless Comments at 16-17.

information so that they have the requisite information to address and/or shut down any signal booster found to interfere with their networks.

Respectfully submitted,

By: /s/ Jouett K. Brenzel

Jouett K. Brenzel  
221 E. Fourth Street, 103-1280  
Cincinnati, OH 45202  
Phone: (513) 397-7260  
Email: jouett.brenzel@cinbell.com

Attorney for Cincinnati Bell Wireless LLC

August 24, 2011