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March 30, 2011

The Honorable Julius Genachowski
Chairman
Federal Communications Commission
Washington, D.C. 20554

Re: Petitions Regarding the Use of Signal Boosters and Other Signal Amplification Techniques Used with Wireless Services
WT Docket No. 10-4

Dear Chairman Genachowski:

The announcement that a declaratory ruling, NPRM, and an order addressing the use of signal boosters were on the tentative agenda for the Commission's upcoming open meeting produced a torrent of misinformation from those who would deny wireless consumers, including public safety agencies, the use of non-interfering boosters. My client, Wilson Electronics, Inc. ("Wilson"), is dismayed by the tactics employed by the large wireless carriers and their allies in their last-minute attempts to derail the Commission's effort to regulate signal boosters in a way "that helps to fill gaps in wireless coverage and expands broadband in rural and difficult-to-reach areas, while protecting wireless networks from harm." This letter will serve as Wilson's counter to such tactics.

In separate letters to you that were chock-full of generalizations, APCO International ("APCO") and the National Public Safety Telecommunications Council ("NPSTC") even oppose the interim use of signal boosters that meet the Commission's technical standards. APCO merely alludes to the "dangerous interference" that signal boosters pose to public safety land mobile operations. For its part, NPSTC claims that unidentified "[t]echnical experts in the signal booster and commercial operator communities" advised it that signal boosters that employ automatic gain control and oscillation detection "can still interfere with public safety operations if improperly installed." All that Wilson can say in response to such wholly-unsubstantiated

claims is to inform the Commission that, to the best of its knowledge, it has *never* received a complaint that one of its signal boosters caused interference to a public safety operation.

Regrettably, APCO and NPSTC have succeeded only in showing how out of touch they are from their rank and file. As the record in WT Docket No. 10-4 clearly shows, first-responders are ardent proponents of the use of signal boosters. Lest there be any doubt that signal boosters have the support of the "boots on the ground," I have attached 53 pages of testimonials to the public need for signal boosters that were gathered from individuals who are involved in public safety on a daily basis. Whereas APCO and NPSTC worry about potential interference, law enforcement officers — including members of the Nevada and West Virginia highway patrols — and other first-responders around the country use and rely on signal boosters. And the record shows that signal boosters help save lives, a weighty factor in the Commission's public interest calculus.

In the past two weeks, AT&T, Verizon, the National Emergency Number Association and, most recently, APCO and NPSTC have voiced concern that signal boosters could degrade the performance of E911 location accuracy technology. However, in many cases, the use of boosters will actually improve E911 connectivity and accuracy. For example, in the TDOA (Time Difference of Arrival) method of determining E911 location positioning which requires three cell sites for triangulation of a mobile station location, the use of a signal booster can oftentimes access the required three cell sites. Without a signal booster, it may not be possible for an E911 call to be placed, much less triangulated. If a booster is used, the coverage of the mobile station is vastly increased, thereby increasing the likelihood of successfully placing the E911 call in the first place. Once the call is placed, the mobile station is much more likely to reach additional cell sites thereby increasing the probability of being readable by the requisite three cell sites needed to pinpoint the location of the mobile station.

The following table shows the affect of using signal boosters upon the parameters that determine E911 accuracy:

Description	FCC ID	Additional Signal Delay Due to Signal Booster (nanoseconds)*	Additional E-911 Error Due to Signal Booster (meters)*
"Sleek" mobile & in-building booster	PWO2B5225	63.2	18.9
Mobile & SOHO wireless booster	PWO271201SA	129.9	38.9
"DB Pro" in-building wireless booster`	PWO271265	173.2	51.9

*Numbers are the average of measured results for 3 signal boosters during uplink transmission in the AMPS (850 MHz) band.

Since the allowable accuracy for network-based technology in E911 positioning is 300 meters for 90% of calls and 100 meters for 67% of calls, *see Wireless E911 Location Accuracy Requirements*, 25 FCC Rcd 18909, 18947 (2010) (new 47 C.F.R. § 20.18(h)(1)), the above data demonstrates that the additional error introduced by signal boosters is relatively small.

By enabling connections with a greater number of cell sites, the use of signal boosters will improve E911 connectivity and accuracy for mobile stations in marginal locations. Since modern boosters disable themselves when they are close to cell sites, there is no degradation of E911 accuracy in such situations. Therefore, the use of signal boosters causes no harm to the E911 system and actually improves the efficacy of the system for users in remote rural locations.

Finally, we come to the ex parte presentations made on behalf of Verizon and Verizon Wireless (together "Verizon") on March 28, 2011, and disclosed late yesterday. To support its claim that automatic gain control and oscillation detection are insufficient to prevent harmful interference to public safety and E911 operations, Verizon produced a spreadsheet that purports to show that signal boosters caused eight instances of interference (including five instances which allegedly involved Wilson signal boosters) in seven states during the two-and-a-half-year period from December 11, 2008 to March 14, 2011. Verizon did not explain why it withheld this information until the very eve of the Sunshine Period, thereby leaving Wilson no time to investigate whether its signal boosters actually caused interference. Moreover, Verizon did not produce the serial numbers of the Wilson boosters, information that is required if Wilson is to determine whether the boosters employed proximity detection, automatic gain control, and oscillation detection and shut-down, or whether they were "legacy" equipment that did not include those safeguards. However, it is highly unlikely that the Wilson boosters that allegedly caused interference on December 11, 2008, January 5, 2009 and March 5, 2009 employed automatic gain control and oscillation detection.

Wilson submits that Verizon's last-minute proffer has no probative value since the unverifiable information produced is insufficient to cast any doubt as to whether Wilson's *current* safeguards actually protect wireless networks from interference. Wilson asks that the Commission disregard Verizon's spreadsheet not only on relevance grounds, but because it was unconscionable for Verizon to produce such a suspect document so late in the process.

Thank you for your consideration of this very important matter.

Very truly yours,

Russell D. Lukas

cc: Commissioner Michael Copps
Commissioner Robert McDowell
Commissioner Mignon Clyburn
Commissioner Meredith Baker
Rick Kaplan
John Giusti
Angela Giancarlo
Louis Peraertz
Charles Mathias
Ruth Milkman
Michael McKenzie
Roger Noel