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May 4, 2011

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 - 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Ex Parte

Re: Notice of Ex Parte Presentation, Amendment of Part 15 Regarding New Requirements and Measurement Guidelines for Access Broadband over Power Line Systems; Carrier Current Systems, Including Broadband Over Power Line Systems, ET Docket Nos. 04-37, 03-104.

Dear Ms. Dortch:

This written *ex parte* presentation responds to the *ex parte* submission of ARRL, the National Association for Amateur Radio (ARRL) filed November 30, 2011.<sup>1</sup> Specifically, UTC opposes ARRL's claim that "35 dB notch depth requirements for Amateur bands ... can be implemented in the rules without adverse impact on the BPL industry."<sup>2</sup> Contrary to the claims of the ARRL, 35 dB notching is not required under industry standards, and it is unclear whether and to what extent existing equipment can support such a capability. To the extent that some BPL technologies do support 35 dB notching or to the extent that some systems have voluntarily notched the Amateur Radio bands, the Commission should not impose a mandatory 35 dB notching requirement for all BPL technologies and systems. It is not necessary to impose a requirement of 35 dB notching to protect Amateur Radio operations, and it is clear that such a requirement will adversely impact BPL performance. Instead, the Commission should allow BPL equipment manufacturers and system operators to voluntarily provide such notching capabilities.

The assertion by ARRL that *some* BPL technologies can achieve 35 dB notching does not mean that the FCC must require 35 dB notching by *all* BPL technologies. ARRL claims that IEEE's P1901 standard shows that 35 dB notching is achievable generally, and that "this standard establishes the need for BPL systems to completely avoid the use of spectrum allocated to the Amateur Radio Service."<sup>3</sup> Contrary to the ARRL, the P1901 standard only refers to 35 dB notching with respect to one type of BPL

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<sup>1</sup>*Ex Parte* Submission of ARRL, The National Association for Amateur Radio in ET Docket Nos. 04-37 and 03-104 filed Nov. 30, 2011.

<sup>2</sup> *Id.* at 2.

<sup>3</sup> *Id.* at 5. See also *Id.* at Exhibit A, p. 14 (stating that "the most compelling indication that the BPL industry recognizes the importance of not using the Amateur bands, and for the most part is implementing systems that do not do so, is found in the IEEE standard on BPL protocols and specifications: IEEE P1901 *Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications.*")

Marlene Dortch

May 4, 2011

Page 2 of 2

technology: wavelet OFDM. Moreover, the standard does not *require* a notch depth of 35 dB for wavelet OFDM or a notch of any particular depth for that matter. Instead, the standard merely states that “[c]ontrolling two or more carriers using the wavelet OFDM creates various power level bands of up to -35 dB, which significantly reduces interference to other systems (e.g., shortwave radio) using the same frequency bands.”<sup>4</sup> Importantly, this is merely an informative reference in the standard that explains that wavelet OFDM can achieve notch depths *up to* 35 dB. It is not a normative reference that would require 35 dB notching, and it certainly doesn’t say that it is necessary to notch 35 dB below the existing FCC limits to protect against interference to Amateur Radio Services, as ARRL claims. Finally, this excerpt pertains only to wavelet OFDM, and it is not representative of the performance of BPL systems generally, contrary to the claims by ARRL.<sup>5</sup> It is misleading at best to suggest that 35 dB notching is required at all, much less for BPL technologies in general.

Similarly, the assertion that *some* BPL systems have chosen to voluntarily notch the Amateur Radio bands does not mean that the Commission should require BPL systems to notch by 35 dB, as ARRL suggests. Instead, it is speculative at best to suggest that it is necessary to notch by 35 dB in order to protect Amateur Radio operations. The Commission has already concluded that 20 dB notching is sufficient to resolve any harmful interference that might occur to mobile operations.<sup>6</sup> In addition, there have been no reported interference complaints to fixed operations that have required 35 dB notching to successfully mitigate the interference. While the interference protection benefits of 35 dB notching are speculative, the negative impact on performance is clear. A deeper notch depth generally requires a wider notch width, which means less bandwidth and lower speeds in terms of performance. Therefore, the Commission should continue to allow BPL systems to voluntarily notch the Amateur Radio bands, rather than impose 35 dB notching.

For all of these reasons, the Commission should not require Access BPL systems to notch by 35 dB, as proposed by the ARRL. If there are any questions concerning this matter, please let me know.

Very truly yours,

*Brett Kilbourne*

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cc: Alan Stillwell  
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<sup>4</sup> IEEE P1901, *Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications*” at 1234 (Dec. 30, 2010).

<sup>5</sup> *Compare Ex Parte* Submission of ARRL at Exhibit A, p. 16 (citing Figure 14-30 from the P1901 standard and claiming that “this shows that BPL technology is capable of notch depth of at least 45 dB, at least in this measurement chosen by the P1901 consensus body to be representative of the performance of BPL systems.”)

<sup>6</sup> *Amendment of Part 15 Regarding New Requirements and Measurement Guidelines for Access Broadband over Power Line Systems*, Report and Order, ET Docket No. 04-37, 19 FCC Rcd 21265 at ¶65 (2004).