



## An Open Letter to the FCC Regarding the ARRL's Submissions to Notice of Inquiry, FCC 03-100

C/o Ed Thomas, Chief  
Office of Engineering and Technology  
Federal Communications Commission  
445 12TH ST SW  
Washington DC 20554

December 1, 2003

Dear Mr. Thomas:

As a responsible supplier of BPL technology, services and equipment, Corridor Systems is interested in accurate assessment and portrayal of both the problems and the value associated with this emerging technology. As the period for direct response to the FCC's NOI has now ended, this open letter is being presented to help clarify what Corridor Systems believes are incorrect assumptions, assessments and conclusions by the American Radio Relay League (ARRL). In its [reply comments](#) dated August 20, 2003 to the FCC's Notice of Inquiry, FCC 03-100, released April 28, 2003, the ARRL has stated:

*"BPL simply duplicates existing means of providing broadband services to consumers using an inferior technology that, as has been clearly demonstrated by the ARRL, would cause widespread spectrum pollution and severe degradation of the unique HF resource."*

and

*"ARRL has demonstrated in its comments, based on a series of technical studies and calculations, that there is a severe interference potential from BPL in the bands between 1.7 and 80 MHz to Amateur Radio stations. "Unfortunately, however, the results of the "field tests" conducted by "entities offering BPL" have not been made part of the public record, so the Amateur Radio community can only presume they don't exist."*

Corridor Systems strongly disagrees with this assertion. In field tests demonstrating its BPL technology, Corridor has clearly shown a technology capable of very efficient, high rate information transport which has no measurable impact on HF through VHF communications and which is at the same time unaffected by radiated signals within that range.

Corridor Systems has tested and demonstrated simultaneous operation of its BPL technology and amateur radio HF communications. Utilizing a 100 watt, 7 MHz, 21 MHz and 28 MHz amateur SSB/CW transmitter connected to a dipole antenna located within 20 feet of an operating BPL system, there was not any evidence whatsoever of the operation of one system in the other. Amateur UHF communications at 446 MHz and at a 25 watt power level were similarly unaffected and in turn were not detected by the BPL system. Examination of the .1 - 30 MHz HF spectrum with a quality communications receiver also revealed no evidence of the BPL system.

Corridor Systems  
3800 Rolling Oaks Road  
Santa Rosa, CA 95404  
[www.corridor.biz](http://www.corridor.biz)  
415-455-9264

Spectrum analysis has been utilized to examine the entire .01 MHz to 2000 MHz spectrum present at the terminals of several types of antennas immediately adjacent to a BPL system which was operating normally. No BPL related signals at all were found within a variety of resolution bandwidths, from 10 Hz up to 5 Mhz, and down to a lower measurement limit which was set either by normal incoming signals or the noise figure of the analyzer; approximately -155 dBm in a 10 Hz bandwidth. This measurement was also performed just after a solar coronal mass ejection when HF propagation changes had caused normal signals within the HF spectrum to be particularly weak or absent and thereby created an even more sensitive environment for measurements.

Corridor Systems also strongly disagrees with the ARRL's comments that "*BPL simply duplicates existing means of providing broadband services to consumers using an inferior technology...*". First, Corridor Systems has demonstrated a system capable of delivery 216Mbps symmetric internet access capacity. This far exceeds today's capabilities of Cable, xDSL, fixed wireless, or satellite solutions for consumer internet access. Second, the electrical infrastructure, combined with technology such as Corridor Systems', provides potentially ubiquitous reach for broadband, including the ability to deliver services to rural areas that are currently not served by Cable or DSL providers. Providing internet access to rural and underserved areas is a stated strategic objective of the U.S. government and the FCC. Third, providing a "duplicate" means of internet access is important to the competition necessary to grow internet access and usage, which has been deemed by the U.S. government as an important economic objective. Consolidation among Cable and DSL providers means the competition may stem primarily from alternate ("duplicate") means of broadband access.

Although in the original ARRL filing, dated July 7, 2003, the ARRL states,

*"ARRL's interest in this proceeding is related only to the interference potential of BPL to Amateur Radio medium-frequency (MF), high-frequency (HF), and very-high-frequency (VHF) communications, and, conversely, the potential for Amateur Radio to interfere with BPL in those same frequency ranges."*

Corridor Systems believes that equitable sharing of public spectrum and coexistence of services, including the amateur radio service, is important not only at the lower frequencies addressed by the ARRL but in the UHF and microwave region as well. Accordingly, Corridor Systems has also demonstrated the characteristics of its BPL system in the frequency range of 2 GHz to 20 GHz, both with regard to susceptibility to other users sharing the spectrum (ingress sensitivity) and radiation which could possibly affect other users (egress).

During its recent demonstration of 216 Mbps BPL, using 2.4 GHz and 5.3 GHz ISM/Part 15 spectrum, Corridor Systems demonstrated normal system operation, maintaining high dynamic range, in spite of the presence of a high-level, 2.4 GHz fixed wireless transmitter located approximately 1/2 mile and within line-of-sight of the BPL system and sharing common spectrum.

Egress measurement along the power line being utilized by the BPL system showed a maximum radiated level of less than -10 dBm EIRP, as measured at ground level directly below the power line. This emission level was less than 1/10,000th the power (-40 dB) of the nearby fixed wireless system, it was also less than 1/100th (-20 dB) the power of the radiation from a typical wireless client device, such as an 802.11 based wireless network card operating inside of a laptop computer. The ARRL concludes with

*" The comments in this proceeding from Amateur Radio operators reinforce, and the comments from BPL advocates offer nothing to rebut, ARRL's conclusion that the concept of expanded PLC systems at HF and low-band VHF is flawed. There is currently a multitude, and probably sufficient array, of competitive broadband delivery mechanisms. But for the severe interference potential from, especially, access BPL to licensed Amateur Radio operation, it might be reasonable to add BPL as a competitive means of providing Internet access through existing infrastructure. As it is, BPL cannot be utilized as a broadband delivery system. The Commission has stated as a fundamental principle that incumbent, licensed radio services, including the Amateur Service, must be protected from interference from any deployment of BPL. However, premised on the calculations previously filed, and the actual field measurements and interference evaluation conducted by ARRL and summarized in Exhibit A hereto, there is no compatibility between BPL and Amateur operation at HF or VHF. Nor is there any means of addressing or rectifying interference events when the inevitable interference is experienced."*

The conclusion that BPL is not compatible with the amateur service is not correct and is clearly refuted by tests and demonstrations which have shown a new and superior technology supporting very broadband delivery of information and capable of providing Internet service in an extremely efficient manner, having no impact on, and not being affected by, HF-VHF communications. Contrary to ARRL's assertions, these demonstrations provide tangible proof that BPL is a viable means of economically delivering very high rate information by way of existing power lines. Furthermore, Corridor Systems has presented a technology capable of coexisting and cooperating within current Part 15 rules while producing only a fraction of the emissions of other users sharing the spectrum. Corridor Systems has demonstrated a BPL technology which is completely compatible with the Amateur Radio Service and, indeed, with all users of the HF-VHF spectrum, one which can be operated completely within Part 15 guidelines, is compatible with other services and is an excellent cohabitant of the public spectrum.

respectfully submitted,

Glenn Elmore

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Chief Technology Officer

Corridor Systems