

Hello,

I have held the amateur service call N3UMH since 1995, and I have consistently been an active operator, maintaining a station at my place of residence for most of those years.

I am concerned about the possibility of deployment of significant Broadband Over Power Line internet access. While I appreciate that it could bring competitive broadband access to many consumers, and give the possibility of broadband to rural users, I think that there is a significant risk to the users of the spectrum between 2 and 80 MHz.

There is potential for considerable interference to and FROM radio services in this part of the spectrum. Although the BPL systems will be designed to protect these services from interference, the power transmission grid was not designed to carry broadband signals.

For this reason, the power lines in some places, if not most places, will likely be unintentional radiators over large swaths of spectrum. Limiting the interference potential of these emissions will be challenging.

Interference will probably not be local, traced to a faulty insulator or transformer, as spark generated power line RFI often is today. Rather, entire neighborhoods of power lines could be a source of broadband radio noise.

Fixing the unintentional radiators may require shielding, burying power lines, moving power lines, or other measures that would not only affect broadband customers, but power customers as well. The alternative would be to change the signal coming across the lines, which could limit the utility of the broadband access.

The limits of 30uV/m electric field strength could translate to extremely strong signals on sensitive receivers, limiting the ability of licensed users to use their radios even with properly adjusted BPL technology. If the BPL signals are stronger than those one wishes to receive, then the interference is a huge problem.

American Radio Relay League calculations of the increase of the ambient HF noise floor near BPL systems using the HF spectrum estimate an increase in noise of maybe 70dB. This would totally wipe out many of the signals that I routinely receive on my amateur HF gear. If this is the case in installed BPL services, it does not seem that HF services are protected.

Another serious concern is the possibility of licensed transmissions interfering with internet access. Under part 15 rules, the BPL system would have to accept such interference. Neighbors are often not so easy to convince. If an amateur radio operator was obliterating the internet access for his or her entire neighborhood, and the only way to mitigate this was to stop transmitting or get the power company to revamp the BPL system, many amateurs would stop transmitting.

Amateur Service ops who can neither transmit nor receive signals are not much use.

Perhaps the incidence of interference will be low, and such a situation will not arise, but the fact that power lines are designed to carry 60Hz signals make it likely that radiated and recieved interference will be a big problem.

My main concern is, of course, the impact on the amateur radio spectrum. Amateur radio operators are instrumental in providing infrastructure independent communication in times of emergency or disaster, and to remain skilled, must be able to practice their radio skills. BPL systems could hamper this tremendously if not carefully deployed to ensure that interference was not present.

We must take concrete steps to make sure that interference is kept to a minimum. I suggest working closely with amateur radio operators in the BPL tests. Amateur radio operators engage in many activities between 2 and 80 MHz and I am certain that many volunteers could be found to assess real-life impact of BPL on HF and lower VHF communication of all types. This will give a more reliable measure of how BPL affects the licensed services in an area where it has been deployed.