

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
Amendment of Part 15 regarding new requirements)
and measurement guidelines for Access Broadband) ET Docket No. 04-37
over Power Line Systems)

Comments on Notice of Proposed Rule Making

Submitted by

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Introduction

The Commission proposes certain requirements to permit electric transmission utilities and others to operate a “Broadband over Power Line” (Access BPL or simply BPL in this document) service over widely distributed medium/high voltage electric power infrastructure. As a licensee in the Amateur Radio Service, I strongly oppose deploying this technology without the most careful and dispassionate evaluation of its interference properties, along with strict operational supervision. As well demonstrated by the National Association for Amateur Radio (ARRL), BPL technology is likely to severely impact the Amateur Radio Service, as it typically employs exceedingly sensitive receiving equipment and antennas in the 1.8 – 30 MHz spectrum located in the same residential

neighborhoods that BPL purports to serve.

In these comments, I address the question of interference management and oversight, should BPL technology be widely deployed. My comments grow out of my career experience of over 30 years in radio astronomy and information technology, and also from some 37 years as a licensed amateur radio operator.

Comments on Compliance and Operational Procedures

I focus specifically on two issues raised by this NPRM. Can providers of Access BPL reasonably cease operations if they cause harmful interference to licensed services? (§§39-42) And, how can the proposed publicly-accessible database (§43) be managed effectively?

Interference Complaint Management

The Commission recalls the requirement of Part 15 operation, that “operations must cease if harmful interference to licensed services is caused.” (§39) While this is a useful principle, the Commission leaves unclear how it could be enforced in practice. BPL service raises new issues with regard to enforcement that must be addressed:

- How is the existence of “harmful interference” to be determined? If a single licensed amateur operator reports harmful interference, will his or her claim be accepted at face value and will the entire BPL system be shut down? It is hard to believe that the BPL service provider and the FCC itself would not throw up lengthy and expensive-to-overcome roadblocks against aggrieved individuals. A typical amateur radio operator (or shortwave listener) is ill-prepared to hire lawyers and go to court to protect his rights in such a situation.
- If available, how would “adaptive interference mitigation techniques” (§40) be

employed in practice? Would the BPL service provider actually accept calls from local amateur radio operators requesting that they clear out the 14 MHz amateur band for their use tonight? To do so on a local and time-specific basis would require an expensive and unlikely allocation of resources by the provider.

- Interference mitigation procedure needs to recognize that typical amateur radio operation involves very low transmitting duty cycle across many frequency bands. Amateur operators may spend 90% of their time in “listening mode”, which is where they are most sensitive to BPL interference. Dynamic mitigation strategies will not protect typical amateur operations, which involve rapid switching among operating bands and only occasional transmission.
- Requiring BPL devices to “incorporate a shut-down feature” (¶42) is a positive step that would be needed in case of an extreme interference episode, perhaps resulting from equipment failure. However, shut down implies cutting off Internet service to a substantial number of customers, and BPL providers are unlikely to do this on the basis of amateur radio reports, without, again, a lengthy and expensive procedure on the part of the complaining party.

Because of the power and resource imbalance between the individual amateur radio operator (or even local amateur organizations) and the large corporate providers of Access BPL service, the Commission must require stringent protections for the licensed Amateur Radio Service. (Similar consideration applies to shortwave broadcast listeners.) It is unreasonable to expect BPL providers to be responsive to individual complaints in a timely and effective manner. In fact, the long history of radio interference from conventional electric power service to licensed amateur services suggests that electric utilities very often lack the technical competence and customer responsiveness to correct radio interference situations.

(The Commission draws the wrong conclusion in (¶35) in presuming that

amateurs have already taken steps to minimize antenna-to-power-line coupling. The lesson of history for amateurs is that power utilities are potentially enormous sources of broadband noise emissions, and that when such episodes occur, it is frequently very difficult to get any attention from the utility to cure the problem.)

The only reasonable protection for the individual operator in the licensed Amateur Radio Service would be for Access BPL providers to **permanently** “notch out” all frequency bands allocated for this Service. This could be done through case-by-case requests, but the Commission should clearly state that the presumption that an individual complaint is to be accepted at face value by the provider. I.e., the entire burden of time and expense must fall on the Access BPL service provider.

Access BPL Public Database

Finally, I address the “publicly accessible database for Access BPL information” as proposed in (¶43). While in principle this is a useful concept, the implementation details are crucial. In particular, the following points must be properly addressed by the Commission:

- Who is responsible for accuracy and completeness of the data?
- What requirements are there for timely updates to the data?
- Are the data to be presented in a “user friendly” manner that an individual Amateur Radio operator could reasonably interpret?
- Is there a process for public challenge or correction to the data?
- What are the penalties to service providers for inaccurate, incomplete, or untimely data?
- Will the database be distributed in convenient manner, e.g., via the world wide web?
- Will current operational data be provided? (equipment in or out of service, frequency notching in effect, etc.)

Absent strong requirements from the Commission, we can assume that the Access BPL providers will use every opportunity to minimize the access and value of this database to potentially “contentious” members of the public, especially operators in the licensed Amateur Radio Service. In particular, relying on “an industry-operated entity” (§43) for this process, which would be unanswerable to the public, seems a dubious choice if the Commission is seeking effective interference control. Given the likelihood of adversarial situations, the database should be operated by a neutral party, such as the Commission itself.

Conclusion

The Commission's decision to permit BPL deployment under Part 15 rules poses a number of problems. Enforcement of the requirement not to cause harmful interference to licensed services will be difficult once substantial investments are made, unless the Commission enforces a strict policy to protect the interests of individual licensees in the Amateur Radio Service and other services by placing the compliance burden firmly on the BPL providers. Furthermore, the proposed public database of BPL installation hardware will not be helpful unless the Commission lays out clear rules for the quality, usefulness, and accessibility of data to be provided.

Access to the public radio spectrum must be carefully protected, especially for licensed radio services, but also for passive users, such as shortwave listeners and radio astronomers. I trust that careful attention to the points in this submission will be helpful in this task.

Respectfully submitted,
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