

***In the Matter of FCC Docket #01-304  
NOI entitled  
“Inquiry Regarding Carrier Current Systems, including Broadband over Power Line  
Systems”***

***Additional Comment By Steven E. Matda  
May 15, 2003***

*(Note: This is an additional comment filed in the matter of Docket #01-304. The writer's original comment was filed on May 1, 2003)*

At the request of various entities, the FCC has been asked to examine the necessary regulatory changes in order to facilitate the widespread development of Broadband Over Power Line (BPL) systems. Current BPL systems are covered under 47 CFR 15.113, which places a maximum operational frequency limit of such systems to 490 kHz. As there are very few services located below this frequency range and propagational effects are primarily groundwave in nature, interference is minimal.

However, as the upper limit of frequency is increased, one encounters more and more incumbent users of spectrum. If the current 47 CFR 15.113 is modified to allow operation up to, for example 80 Mhz, BPL systems will be sharing spectrum with the such groups as:

- Maritime Mobile
- AM/SW Broadcasting
- Radiolocation
- Military
- Amateur
- Radio Astronomy
- Citizen's Band
- Fixed Public Service

In addition, as the frequencies involved approach the middle to upper HF region, propagational characteristics begin to favor skywave propagation rather than groundwave. As a result, low levels of radiated power (on the order of milliwatts) can be propagated hundreds or even thousands of miles.

The situation places an interesting strain on the current regulatory structure. This is due to the fact that current experiments (especially those sponsored by the ARRL, the nation's organization of amateur radio enthusiasts) show the BPL will radiate electromagnetic energy at such levels as to seriously degrade HF communications in the surrounding vicinity, even at current Part 15 regulatory levels.

Current users of spectrum have incredibly strong protections against Part 15 devices. 47 CFR 15.5 states:

(b) Operation of an intentional, unintentional, or incidental radiator is subject to the conditions that no harmful interference is caused and that interference must be accepted that may be caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator.

(c) The operator of a radio frequency device shall be required to cease operating the device upon notification by a Commission representative that the device is causing harmful interference. Operation shall not resume until the condition causing the harmful interference has been corrected.

If the Commission simply changes the scope of 47 CFR 15.113 to authorize frequency usage of BPL systems up to 80 Mhz, without any other considerations, then essentially every incumbent spectrum user, upon receiving interference, can ask that that portion of the BPL-enabled spectrum be shut down under 47 CFR 15.5. Due to propagational characteristics, it is entirely possible that the station receiving the

interference could be miles away from the source...meaning that large areas of the United States would be off-limits to the deployment of BPL because of interference complaints.

As an aside, I note that several military/government radio facilities (such as Green Bank, WV, and Cutler, ME) are located in rural areas due to the low level of man-made radio noise and/or easy availability of antenna space. As a consequence, it would only make sense that BPL would be even more of a problem in these areas as far as interference is concerned.

Under the current regulatory structure of primary and secondary allocations, if BPL is given *any* sort of frequency sharing arrangement with another service, the incumbent users of the spectrum should not have to tolerate a diminished service level to accommodate such a system. To do so would be to effectively render all primary and secondary user allocations meaningless with regard to Part 15 devices. *Therefore, one has to logically conclude that to maintain coherent regulatory policy, no Part 15 device should be exempt from the conditions set forth in 47 CFR 15.5.*

Part 15 was originally designed to accommodate devices with the following characteristics:

- low-power
- intermittent
- point sources
- unintentional/incidental radiators

As such, the Commission decided (correctly, I might add) to loosen the licensing requirements. Does BPL fall under this category? It is agreed that BPL would operate at relatively low power levels. However, where most Part 15 devices operate on a discrete frequency, BPL would occupy a continuous spectrum of up to 80 Mhz wide—not including harmonics of the fundamental frequency. Entire power grids would radiate...not just a single device. *For these two reasons, it is clear that the BPL system currently proposed would fall outside the regulatory philosophy of Part 15.*

In the recent rulemaking proceeding ET Docket No. 02-98 (RM-9404—“In The Matter of Amendment of Parts 2 and 97 of the Commission’s Rules to Create a Low Frequency Allocation for the Amateur Radio Service”) the Commission denied the proceeding in part because:

“Many of the utilities indicate that the new amateur allocation would give amateurs the right to demand that interference from a PLC system be resolved.”

The Commission validated this concern, saying:

“We believe that the utility companies have raised a valid concern that an allocation to the amateur service could result in the need for PLCs to modify or cease their operations to avoid causing interference to amateurs.”

This, I would argue, is a two way street. *If incumbent users of HF spectrum are denied allocations using PLC frequencies on the basis of interference concerns, then why should PLC companies be given access to existing HF allocations?* The Commission has (rightfully so) decided that Amateur radio operations and PLC control operations are fundamentally incompatible on practically every level, and denied the petition due to the criticality of PLC transmissions on these frequencies. BPL using HF is *not* critical to the national infrastructure, and therefore *should not* be afforded those considerations granted in RM-9404 to existing PLC systems.

In conclusion, the Commission should not need to look any further in this matter...the decision made in RM-9404 provides more than enough answers.

I thank the Commission for its time.

Respectfully,  
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