

Greetings.

As both an electrical engineer specializing in the field of electromagnetic interference, and having designed broadband, spread spectrum communications equipment and systems, I must respond to many of the comments already submitted on the subject of BPL. Many of the comments miss a key system issue.

While most of the commenters are concerned about the effects of BPL on their communications systems (police, fire, amateur radio, TV, international broadcasting, and other HF/low VHF communications activities), they are ignoring the potentially damaging effects of these services on the BPL system. The problem works both ways. Radio interference is often reciprocal; user A can interfere with another user B, but user B often also interferes with user A.

In the case of BPL, this can and WILL be quite severe in some cases. For example, the signal near a licensed 2 kilowatt amateur radio operator station could be several volts/meter (V/M) depending on the distance from the station. Even a distance of a few miles from an amateur station, the signal induced into the power lines from the amateur transmitter, may be strong enough to swamp out the BPL receiver. This problem is much more severe around broadcast stations that can be transmitting up to 100 Kilowatts.

The technical reason for this problem is this: the BPL receiver is a wideband receiver capable of simultaneous reception from 2 to 80 MHz. If a nearby strong signal is transmitting, the BPL receiver will turn down the receiver gain (called automatic gain control, or AGC) to prevent signal overload. Because of the broadband nature of the BPL system, it cannot differentiate between a strong nearby broadcast station or from the BPL signal it is trying to receive.

This is actually a common problem in the HF bands, and is called "Blocking." HF radio services overcome blocking by using narrowband filters to remove the undesired signal. BPL, being necessarily broadband in nature, is extremely susceptible to blocking.

The effects of blocking on BPL will vary with the distance to interfering stations. In some cases, the BPL system will slow down considerably. In other cases, the BPL system will not be able to communicate at all. In cases where the broadcaster or amateur is within a mile of the BPL receiver, it is likely that the BPL system could be permanently damaged as a result of the interference.

Consider that there are over hundreds of thousands of broadcasters and licensed radio amateurs in the USA and you can appreciate why the chances of blocking are very high.

I urge you to look beyond the attractive qualities of BPL and understand the technical consequences of approving this service. I really cannot see any good coming out of it.

On the other hand, there are outstanding communications medium available with today's technology that will better fulfill the need for broadband. WiFi, Fiber, microwave links (see Motorola's pole-

top systems) and coax are all far MORE robust communications services. My favorite is fiber because of it provides the most bandwidth per dollar, per mile, per link, per any measure you can come up with--BY A FACTOR OF THOUSANDS! A single fiber optic cable today can carry 100 gigabits/sec whereas the BPL system, in a perfect, interference-free situation, may carry 10 megabits/sec (a 10,000 times improvement!).

Respectfully yours,

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