

I would like to preface my comments by saying that I have been a licensed amateur radio operator since I was 14 years old in 1974 and been an active user of the HF spectrum as both an amateur radio operator and a short-wave listener. I have a BSEE and work as a design engineer of avionics equipment. I am familiar with radiated emission testing as it applies to avionics equipment.

The first issue I would like to discuss is the question of what should be the definition of "harmful interference" to users of the HF spectrum. Much of the operation in the HF spectrum is dealing with very weak signals using sensitive receivers and high gain antennas. For example, I have been able to communicate thousands of miles using 5 to 10 watts of transmit power and receiving signals that are right at the noise floor using BPSK or MFSK modulation. Over the last thirty years I have observed an increase in spurious emissions as consumer devices such as VCR, DVD players, PC's, and video games have become more prevalent. While these devices are all Part 15 compliant, they are definitely audible (10db above the noise floor in some cases) with my receivers. I can hear both the devices in my home and my surrounding neighbor's devices. All of these devices contain processors with clock frequencies and signals in the HF spectrum. They are "harmful interference" in my opinion but fortunately they are narrow band signals (2-3 KHz wide or less) and can usually be worked around. Access BPL is by definition a broad band signal and will cover whole amateur bands (350 KHz or more) in a single channel block. Access BPL running under Part 15 limits is much more than harmful. It would be devastating interference. The NTIA study clearly shows that BPL emissions will raise the the noise floor for residents unlucky enough to live close to a power line. I may be a purist, but I would like the noise floor to be white noise static not the broad band clicks and modulation tones of BPL. Limits more stringent than Part 15 need to implemented for BPL! Radiated emissions of avionics equipment creating interference of this magnitude are not allowed in the frequency bands used for communication and navigation.

The second point I would like to make clear is the dynamic nature of HF propagation. The frequencies of operation change due to the sunspot cycle (12 year cycle), seasonal variation, daily variation, and even minute by minute as conditions change. Can the interference mitigation techniques touted by the proponents of BPL be this dynamic? My radio amateur and short-wave listening activities move up and down the full 2-30 MHz HF spectrum during a given day. Will the operators of the BPL system be willing to accommodate my operation on a minute by minute basis? The answer is surely not, based on the usual response time of months to deal with a noisy arcing insulator on a power pole. Additionally it seems reasonable to assume that as more BPL customers come on line the operators of the system will be less and less willing to give up bandwidth to accommodate interference issues.

The HF frequencies are a unique natural resource designed by the Creator to work with ionospheric propagation providing around the world communication. Access BPL is spectrum pollution and will lay waste to this resource. The only thing driving BPL, it seems, is the ubiquitous nature of the power grid. As an engineer I have

learned that just because technology makes something possible, it doesn't always mean it should be done. BPL technology is brute forcing broad band data communications onto an unshielded transmission line entirely unsuited for that purpose. BPL is an inefficient and inelegant method of creating a broad band network and therefore will ultimately fail and be a waste of investor money. I live in Iowa, a mostly rural state, and there are alternatives already in place and working for rural residents. One of the more popular alternatives is using microwave WAN techniques. Many silo's and grain elevators already contain antennas for this purpose.

The FCC should be managing the spectrum to avoid potential conflicts before money and resources are committed. The FCC's current position on BPL seems to encourage the spectrum conflict first and then try to manage the situation after the inevitable and difficult to solve problems arise.