

As a licensed member of the Amateur Radio Service KB0ETC and a concerned citizen, I respectfully request that your office examine the Notice of Inquiry currently before the Federal Communications Commission, ET Docket 03-104, regarding expanded limits on Power Line Current (PLC) systems for the purpose of deploying Broadband over Power Line (BPL) systems.

PLC is a technology which utilizes the existing power grid as a conductor of low-power radio emissions for the purpose of transmitting data. PLC is regulated under FCC Part 15.209, and is currently used in a limited fashion by utility companies to transmit control signals to remote equipment and also in some in-home devices, such as wireless intercom systems and wireless phone jacks. One such device is marketed under the name of HomePlug. Under current power limits and regulations, PLC serves a useful niche and is relatively harmless.

On 6 February 2003, Current Technologies, LLC filed a request for waiver of existing limits on PLC for the purpose of deploying Broadband over Power Line (BPL) systems, a method of bringing high-speed data services into currently non-serviced areas by using PLC technology. This would allow utility companies to provide services, such as high-speed Internet, to rural areas with relatively little additional investment in infrastructure. While this is a meritorious goal on the surface, it is, in fact, a hazardous goal.

Under FCC Part 15.209, which Current Technologies' request for waiver seeks to modify, PLC systems are allowed to operate between frequencies of 1.7 and 30 Megahertz. Radio frequencies below 30 Megahertz are unique, in that they are capable of worldwide propagation with no infrastructure other than a transmitter, a receiver, and an antenna at each end. Above 30 Megahertz, a man-made infrastructure is necessary to retransmit radio signals. Examples of such a man-made infrastructure are the cellular telephone network, communications satellites, and repeaters for radios in both the Amateur Radio Service and the General Mobile Radio Service. As has been so clearly demonstrated in recent weeks, man-made infrastructure can and will fail, if only for so prosaic a reason as a power failure, such as recently happened in the Northeast.

Because of the ability for radio signals in this frequency range to propagate world-wide, the Federal Communications Commission was formed to safeguard this precious resource. Currently, many licensed radio services have frequency allocations in this portion of the radio spectrum including the Amateur Radio Service, which has nearly a century of history of providing public service communications, including communications with American soldiers stationed overseas through the Military Amateur Radio Service (MARS) and support of disaster recovery efforts for agencies, such as the Red Cross, as we did after Hurricane Andrew and in the aftermath of the terrorist attacks of 9/11.

Another radio service, which has been allocated space in this portion of the radio spectrum is the Citizens' Band Radio Service (CBRS), which operates at approximately 27 Megahertz. The CBRS is vital to interstate commerce and is a lifeline to thousands of travelers annually.

A third radio service, which has been allocated space in this portion of the radio spectrum is the Maritime Mobile Service (MMS), which has various allocations between 2 and 27 Megahertz

for ship-to-shore use. These allocations are vital to international trade and to the safety of the United States Merchant Marine and the Merchant Marine of other nations. Furthermore, these frequency allocations are safeguarded from interference under international treaty obligations.

Finally, according to reply comments to this matter filed by National Telecommunications Infrastructure Administration (NTIA) on 20 August 2003, the military has more than 18,000 frequencies allocated on a primary basis in this portion of the radio spectrum, many of which transmit encrypted data, which is sensitive to disruption.

Increased power limits for PLC emissions, as called for in the request for waiver, will deliver harmful interference to these radio services, resulting in disruption. Such disruption will result in hazard to the life and property of American citizens. Furthermore, because of the great number of military frequencies, which inhabit this portion of the radio spectrum, there may very well be an exploitable hazard to national security due to such interference. That such harmful interference to licensed radio services will take place from increased power limits for PLC emissions is a given. One independent agency, the American Radio Relay League (ARRL) of Newington, CT, an organization representing members of the Amateur Radio Service, has already found harmful interference in the relatively few locations where BPL has already been deployed. Furthermore, the government of Japan, as well as the governments of several members of the European Union also found there to be high levels of harmful interference to licensed radio services as they considered and discarded similar proposals for expanded PLC systems for BPL.

Furthermore, there is the grave risk for interference to be generated by BPL systems on frequencies as high as 80 Megahertz, which would create harmful interference in portions of the radio spectrum, which are allocated to civilian law enforcement and rescue agencies. This will create a definite hazard to life and limb for the average citizen.

Furthermore, because of the high sensitivity needed in PLC equipment, it is extremely susceptible to interference from licensed radio services, which, under FCC Part 15.209, it is required to accept, since it is unlicensed equipment. In fact, the manufacturers of the previously mentioned HomePlug product were forced to initiate a product recall and do a complete redesign of their product for that exact reason. Even with the redesign, however, it is still possible for a nearby radio signal of as little as 5 Watts to render the HomePlug useless. As a comparison, a CB Radio transmits a signal of 4 Watts and an Amateur Radio Transceiver may emit as much as 1500 Watts. This would be enough to render BPL service completely useless over a broad area -- but under 15.209, it would be incumbent upon BPL service providers to accept that interference.

As an Iowan, I am well aware of the economic boost to our state's economy that widely-available high-speed data access would provide. Proponents of BPL will state that BPL is the best way to achieve this.

They are incorrect.

The FCC recently allocated radio spectrum at approximately 5 Gigahertz for the Unlicensed National Information Infrastructure (UNII). The UNII is a less expensive and more advanced alternative

to BPL. The advantages of UNII over BPL numerous -- higher power levels, wider bandwidth (which equals more and faster data throughput), low power consumption (it could be solar-powered), relays only need to be stationed at distances between four and ten miles (as opposed to every mile or two for BPL systems). And the major advantage is that it exists today. There are already commercially-available UNII systems, such as the Motorola Canopy system.

Furthermore, whereas the costs and benefits of BPL systems are currently theoretical (currently only test systems have been deployed), there are currently UNII systems operating in the real world. I would respectfully direct your attention to one such system, using the Motorola Canopy UNII system, which has recently been deployed in Republic, MO, as an example.

For the reasons above, I respectfully opposition to this waiver, filed by Current Technologies, LLC, known.