As an active amateur radio operator, an active R/C model flier, a shortwave listener and an electrical engineer with training in RF communications, I make the following comments to ET Docket 04-37.

Although I applaud the FCC for embracing new technology and not allowing unnecessary restraints to progress, I take exception to the introduction of Access BPL under Part 15 regulations as the short answer to allowing all Americans access to the Internet. The FCC has traditionally taken a very conservative approach to allowing new technologies access to the RF spectrum. Exhaustive laboratory and field testing normally go along with the examination of proposed new and different equipment that uses radio frequency waves as it's communications medium. Emphasis has always been placed on protection of other users of the bands. Once testing is complete, a new standard is created to properly address the introduction and subsequent control of these new technologies before they are allowed, en mass, onto the airwaves. The issue of allowing Access BPL without due diligence has been a startling contrast to that tradition. The endorsement of Access BPL without proper study is a huge disregard for the scientific and engineering method.

Access BPL is a known disrupter of international shortwave broadcasts. There are many reports and findings to this fact. Individuals throughout the world listen to these broadcasts as part of their freedom of access to information from all sources, not just those available on the Internet. It is part of our individual freedom as American citizens to be able to receive and listen to these broadcasts. Access BPL denies that freedom. The United States is a member of the International Telecommunications Union, and as part of that responsibility, the United States should take steps to protect that with which we all work so hard to protect. Access BPL undermines that effort. The intentional blocking of international shortwave broadcasts is in contradiction to our Constitution and should not be allowed. The Internet is not an acceptable substitute for accessing this information on a daily basis.

CATV has separate, strict regulations for the prevention of any disruption of services utilized on the frequencies authorized for the CATV broadcasts. Any leakage in a CATV system must be dealt with promptly and completely. CATV is a closed, shielded system and it works very well utilizing the spectrum that is used by open-air RF communications. Access BPL is not a "closed, shielded" system. It is utilizing open-air wire designed to carry 60Hz electrical power. The very nature of the power lines, the length, height and shear spance of the system is exactly like long wire antennas used by various HF services. To expect that the power lines would contain such RF is ignoring physics. The power line system is a bunch of antennas and Access BPL is the transmitter. Access BPL should be treated just like CATV. Any leakage is unacceptable.

I've studied one of the systems being deployed in Penn Yan, New York. It does indeed disrupt other services. Not only does it interfere with other users of the spectrum, it inherently will interfere with itself! Each "leg" of the system uses 6 MHz of the available spectrum for the BPL information. Each adjacent leg uses a different 6 MHz chunk of the spectrum. In fact, it cannot re-use the same 6 MHz block of spectrum until several legs of separation exist, namely, several blocks. The system will interfere with itself if the legs utilizing the same block are too close. How does the FCC expect the system to work in concert with other users of the spectrum if it can interrupt it's own functionality? The architects of these systems should not have been allowed to test, analyze and present their

own findings to the FCC for acceptance of this technology without independent study and analysis.

The system being deployed in Penn Yan, New York does a good job of completely wiping out all forms of HF communication within 1.5 miles of the system, specifically in the range of 17 to 34 MHz. This is not acceptable interference. During a recent amateur radio contest utilizing some of the spectrum occupied by this Access BOL system, it was noted that only the very strongest of signals were audible amongst the BPL signals. Being able to work within this sea of interfering signals and maintaining contact with other amateurs mean that large amounts of transmitted RF power would be needed. This is contrary to the spirit and intent of amateur radio, "to utilize minimum power levels necessary to maintain communications." Access BPL will force all amateurs to run excessive power levels, approaching the maximum legal limit, to be able to communicate with others. The Federal Emergency Management Administration has stated this independently in their response to the NOI. Most recently, the National Telecommunications and Information Administration report on Access BPL and interference potential further re-enforce the argument that BPL will interfere with whatever existing service is using the band of frequencies in question.

Placing Access BPL under Part 15 rules is a blatant misuse of the original intent of Part 15. Unlicensed transmission of signals under Part 15 are assumed to be point radiators, such as IF oscillators in receivers, master oscillators in personal computers and other sources where continuous emission of RF exists. Also, various sources such as garage door openers or other RFID components momentarily emit radio waves and do not continuously radiate are included. Access BPL is not a point source of radiation. It is a distributed source of continuous radiation, not only on one frequency but also across an entire band of frequencies. The continued stretch of the meaning of Part 15 will open a Pandora's Box of other new users that think they can comply with the "new, revised" definition of Part 15. This is unacceptable.

The proposed measurement method in the NPRM for assuring compliance of Access BPL with Part 15 is also incorrect. This has been stated in the NTIA report and also in the ARRL comment on the NOI. Using loop antennas for measuring distributed sources of broadband emissions cannot be done. This defies physics. There is inherent difficulty in attempting to measure these types of emissions, let alone attempting to assess whether the emissions are in compliance, and opens the door to misuse and misinterpretation to the provider's benefit.

Interference mitigation is going to be an issue. There are amateur radio operators scattered about everywhere, and even more shortwave listeners. Notching bands for a local user is not practical. Amateur radio has bands scattered about the HF spectrum. The same can be said for international shortwave broadcast bands. Bands open and close at various times during the day and in response to sunspots and other atmospheric activity. Unless all amateur radio bands and shortwave broadcast bands get notched, there will be interference. Active mitigation techniques are not practical, as shortwave listeners do not transmit. The system will not know when there is listening being done. Amateur radio operators will have to further pollute the spectrum by "keying up" to let the system know that they're listening. Ninety percent of amateur radio operation is listening. Mitigation techniques will not allow this. Manual mitigation by human intervention will not work,

either. This is evidenced by the actions of the providers of the Access BPL system in Penn Yan, New York. It has been stated by the BPL providers there that accommodating amateur activity is not a priority for them. They even shut the system down to keep analysis from being done by those amateurs investigating the extent of the interference. Cooperation will not exist, because without enforcement by the FCC, nothing will get done. This is a known fact.

Flying radio-controlled models requires the absolute best in equipment performance, especially larger, higher performance models. These are not toys, these are expensive and can be dangerous when the RF link is disrupted. Model aviation is a launch point to many technical careers, and must be preserved. Many of us operate on 6 meters using the amateur frequencies, but most use the 72 or 75 MHz bands. Any interference can be a dangerous thing, so any interference in this case is harmful interference. We cannot afford to have anything but clear channels for operation. A lot of the model sites are in the vicinity of power lines, even though they are in rural locations, a prime target of Access BPL. With smaller models, called park flyers, they can be flown, well, in parks or in backyards. The distance to power lines can be much closer. Access BPL interference is not acceptable for operation of any of these models, anywhere.

A majority of the testing done by the Access BPL manufacturers appears to be without any regard to any radio interference. This is evidenced by the comments by several of the manufacturers in their comments to the NOI. With all the evidence contradicting the findings of these manufacturers, it leads one to question the validity of all of the facts they have presented. The very fact that the list of test system deployment locations has been kept under wraps is an obvious indicator that there is an inherent problem with the systems, and that they wish to continue testing under stealth mode. This should further demonstrate the lack of cooperation that will exist, once systems get widely deployed.

I respectfully request that the FCC re-consider placing Access BPL under the guidance of Part 15 and give it the same treatment as CATV at the time it was introduced. There is no difference as far as interference potential is concerned. Further, I suggest that proper independent studies be done with the systems in existence, and establish proper regulations and certifications, not only for the equipment, but also for the providers and maintenance of their installations. New standards need to be developed for testing, and it doesn’t belong in Part 15. Part 15 limits are no longer valid limit for broadband, distributed source signals. This also needs to be addressed. Further, the statement throughout the Notice that, “subject to the condition that they not cause harmful interference and that they cease operation if they do cause harmful interference” needs to be further defined. Quite recently, one of the Access BPL system providers has drawn an incorrect conclusion that they are no longer causing “harmful” interference and that they comply with Part 15. This needs to be addressed as well.