Federal Communications Commission
Washington DC 20554

In the Matter of		
Inquiry Regarding Carrier Current Systems, Including Broadband over Power Line Systems		ET Docket No. 03-104

COMMENTS OF Phonex Broadband Corporation

Introduction

Phonex Broadband Corporation (hereafter called Phonex) has been designing, producing and selling In-House carrier current devices since 1988. Since that time Phonex has sold nearly ten million carrier current devices throughout the United States and other world markets. Phonex produces both narrow band frequency (less than 200 kHz bandwidth) and broadband carrier current devices.

Phonex has successfully used the FCC *Verification* procedure for compliance in the United States. Phonex also has been cooperative with licensed radio organizations to design our products to reduce the possibility of harmful interference.

Phonex plans to be an active participant in the development and growth of In-House BPL and supports the FCC in their efforts to promote this technology in order to insure that the interests of all radio spectrum users are adequately addressed.

As a developer and manufacturer of In-House carrier current devices, Phonex will limit their comments to issues regarding In-House BPL.

Benefits of BPL

The success of Phonex illustrates the customer demand for power line communication devices. The demand for such devices continues to grow especially with the rise of broadband services. BPL allows an inexpensive alternative to running new cables throughout the home, and in many cases it is the only option for a workable communication link throughout an existing home. In-House BPL can be used for telephone line extensions, ADSL line extensions, computer gaming, computer networking, home automation systems and for audio and video home entertainment. As these technologies grow, so will the demand for BPL devices.

In-House BPL Technology

In-House BPL is an emerging technology with ongoing development. HomePlug currently has a successful standard used by many manufactures including Phonex.

The FCC rightly stated that the current HomePlug standard operates in the 4.5 to 21 MHz frequency range using OFDM modulation. Specific spectrum use and modulation techniques by non-publicly announced In-House BPL technologies are usually considered proprietary information and may not be currently available. Developers however will consider any frequencies of the spectrum, including those outside the 4.5 to 21 MHz frequency range, in developing a product that gives the consumer the best product.

Absolute values for maximum data transmission speeds cannot reasonably be given. Typically, new innovations emerge that out-perform existing models. It is reasonable to expect data speeds to increase beyond the current typical HomePlug performance of four to seven Mbits of throughput.

Security techniques also are considered proprietary information by new developers. Security measures are of high concern to consumers and thus a major driving feature in producing competitive BPL products. Phonex thus believes that market demands will insure security rather than having the FCC specify security protocols.

Interference from BPL Emissions

In-House BPL products use house wiring as a communication path rather than as an antenna. Any radiated signal from BPL products are considered unintentional and are not part of the communication process between BPL nodes. Like any electronic communication device, radiated emissions are possible and therefore regulated by the FCC.

In the many years of developing and testing carrier current systems, Phonex believes that any interference from a power line communication product is due to radiated emissions as opposed to conducted emissions.

Phonex has sold several thousand HomePlug-based BPL products with no complaints of interference. This is likely indicative of other HomePlug devices because HomePlug developed their standard to limit harmful interference while having a functional product. Efforts included working with groups such as the ARRL to limit potential interference within the amateur radio community.

Customer complaints of harmful interference in certain bands will direct In-House BPL developers in choosing the frequencies that should be avoided. The successful In-House BPL standards will be those that are sensitive to licensed radio users. It is recommended that the FCC not define BPL frequencies but allow this technology to properly and innovatively grow without undue constraints. Since FCC Rules are already in place, market forces, which include the avoidance of customer complaints, must be the driving force for In-House BPL development.

Applicability of Current FCC Part 15 Rules

Phonex recognizes the need for protecting licensed radio users from harmful interference

The current FCC Part 15 Rules already specify the radiated limits for carrier current and digital devices. In addition to specifying limits, Section 15.5 of FCC Part 15 Rules specifies that operation of such devices are on the condition that no harmful interference is caused. FCC Part 15

Rules therefore already in place to control interference potential and to legally stop its use when a device is causing harmful interference.

As already stated, any interference from BPL products will mostly be due to radiated emissions. The FCC should therefore not consider adding a conducted limit to the rules as there is no current research that supports a correct correlation between conducted limits and radiated limits

Since In-House BPL technology is new, it is important that the FCC take a light-handed approach to changing existing rules. This will allow confidence and innovation in new development of In-House BPL products and standards.

Measurement methods

The current three-house method of testing radiated emissions is an acceptable test method. Testing done by Phonex has also illustrated that an open area site test using a turn table with a characterized wiring assembly produces similar results to home testing. Phonex therefore supports the development of a standardized measurement method in an open test site but believes that it should be used as an alternative, and not as a replacement to the current three-house test procedure. The three-house test procedure should be retained since it is already successful and proven to allow BPL to develop.

Equipment Authorization Process

Phonex believes that the current Verification process used for all unintentional radiated devices, including carrier current devices, should be retained for In-house BPL devices. Only a small number of In-house BPL standards will be used by manufacturers in their various products. There will therefore not be a large variance in radiated output, between products using the same In-house BPB standard. This is in sharp contrast with the radiated variances that are found in digital devices which also only require Verification.

Summary

The success of Phonex Broadband Corporation selling power line communication devices is evidence that the FCC should continue to support and allow PBL to prosper. The current FCC rules, test methods and processes have been successful in allowing BPLB to develop and to limit its use in cases of harmful interference. With the FCC rules already successfully in place, Phonex believes the FCC should allow the market place to determine the development of In-House BPL.

Respectfully Submitted,

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