



Corridor Systems' Comments on ET Docket No 04-37

C/o Ed Thomas, Chief
Office of Engineering and Technology
Federal Communications Commission
445 12TH ST SW
Washington DC 20554

April 27, 2004

Dear Mr. Thomas:

Corridor Systems is pleased to provide the following comments on the BPL NPRM ET Docket No. 04-37. Please refer also to our letter "An Open Letter to the FCC Regarding the ARRL's Submissions to Notice of Inquiry, FCC 03-100" dated December 1, 2003.

Corridor Systems has invented, developed and demonstrated a broadband power line system that is very different in nature from previous technologies. The fundamental energy transport method is not at all like that of others that have been labeled "Access BPL". Accordingly, Corridor Systems believes that the present definition and characterization of Access BPL, as well as the measurement methods proposed, are not appropriate for all "Access BPL-like" technology. We believe the definitions and measurement methods proposed in the NPRM should be modified as they are not accurate in light of technologies such as Corridor's. The following specific comments on the NPRM point out some of these problems.

1. In the Background section, Section II of FCC 4-29, the description uses the word "most" in its characterization of Access BPL:

Federal Communications Commission

FCC 04-29

*II. BACKGROUND
Description of BPL*

5. Most Access BPL systems today operate on frequencies up to 50 MHz with very low power signals spread over a broad range of frequencies. These frequencies are also used by licensed radio services that must be protected from harmful interference as BPL systems operate on an unlicensed basis under Part 15 of the Commission's rules. In the radio spectrum below 50 MHz, incumbent authorized operations include fixed, land mobile, aeronautical mobile, maritime mobile, radiolocation, broadcast radio, amateur radio terrestrial and satellite, and radio-astronomy. Users of this spectrum also include, for example, public safety and Federal government agencies.

in the Discussion section, Section III, the definition supplied seems to be relevant only to those BPL technologies which operate in the 0-100 MHz region.

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III. DISCUSSION

Definition of Access BPL

32. We propose to define Access BPL as a carrier current system operating on any electric power transmission lines owned, operated or controlled by an electrical power provider, as follows:

Access Broadband over power line (Access BPL): A carrier current system that transmits radio frequency energy by conduction over electric power lines owned, operated, or controlled by an electric service provider. The electric power lines may be aerial (overhead) or underground.

2. This impression of this limited definition for Access BPL technologies is furthered by the comparison to "carrier current systems" elsewhere in the NPRM. In III.47 the suggestion is made to retain and apply the radiation emissions method for In-House BPL and traditional CCS.

47. Measurement Guidelines for Other Carrier Current Systems. In the Inquiry, the Commission observed that the International Electrotechnical Commission (IEC), International Special Committee on Radio Interference (CISPR) Subcommittee I on Interference Relating To Multimedia Equipment, Working Group 3 on Emission from Information Technology Equipment is developing conducted emission limits for new BPL technologies.¹⁰⁵ We note however that this international work on a standardized measurement method for In-House BPL is still under way, including work on the definition of a line impedance stabilization network (LISN),¹⁰⁶ associated injection methods, and conducted emission limits for systems using the power line port as a communication port.¹⁰⁷ We tentatively propose in the interim, pending the completion of such work, to retain the three-installation radiated emissions method for In-House BPL and traditional CCS, using the measurement guidelines in Appendix C, which clarify principles used regarding in-situ test buildings, device installation location within a building, measurement distances from the building, measurement of emissions from overhead power feed lines to the building, and device operation. We seek comment on the measurement guidelines of Appendix C for In-House BPL and CCS.

Details of these methods are included in Appendix C.

APPENDIX C: PROPOSED MEASUREMENT GUIDELINES

2. Access BPL Measurement Principles

2) Testing shall be frequency exceeds the lowest frequency injected onto the power line by more than a factor of two, testing shall be extended in steps of 1/2 wavelength of the mid-band frequency until the distance equals or exceeds 1/2 wavelength of the lowest frequency injected. (For example, if the device injects frequencies from 3 to 27 MHz, the wavelength corresponding to the mid-band frequency of 15 MHz is 20 meters, and wavelength corresponding the lowest injected frequency is 100 meters. Measurements are to be performed at 0, 5, 10, 15, and 20 meters down line--corresponding to zero to one wavelength at the mid-band frequency. Because the mid-band frequency exceeds the minimum frequency by more than a factor of two, additional measurements are required at 10-meter intervals until the distance down-line from the injection point equals or exceeds 1/2 of 100 meters. Thus, additional measurement points are required at 30, 40, and 50 meters down line from the injection point.) performed at distances of 0, 1/4, 1/2, 3/4 and 1 wavelength down the line from the BPL injection point on the

power line. Wavelength spacing is based on the mid-band frequency used by the EUT. In addition, if the mid-band

3. It seems quite obvious that these tests are not appropriate for the upper RF and microwave frequency region where wavelengths are measured in small numbers of centimeters rather than meters or ten's of meters. Neither do these tests seem relevant to situations where relatively low percentage bandwidth spectrum is being utilized and therefore lower and upper frequencies and wavelengths are nearly the same, as the case with Corridor's technology.
4. Appendix B further applies and implies low frequency attributes to "Access BPL" in a manner that is inappropriate, inaccurate, and unfairly restrictive to Corridor's technology.

APPENDIX B: PROPOSED RULES

PART 15 - Radio Frequency Devices

Section 15.109 Radiated emission limits.

(e) Carrier current systems, including BPL systems, used as unintentional radiators or other unintentional radiators that are designed to conduct their radio frequency emissions via connecting wires or cables and that operate in the frequency range of 9 kHz to 30 MHz, including devices that deliver the radio frequency energy to transducers, such as ultrasonic devices not covered under Part 18 of this Chapter, shall comply with the radiated emission limits for intentional radiators provided in Section 15.209 for the frequency range of 9 kHz to 30 MHz. As an alternative, carrier current systems used as unintentional radiators and operating in the frequency range of 525 kHz to 1705 kHz may comply with the radiated emission limits provided in Section 15.221(a). At frequencies above 30 MHz, the limits in paragraph (a), (b) or (i) of this Section, as appropriate, continue to apply. For all BPL systems, the requirements of this paragraph and paragraph (a) of this section shall also apply to the emissions from all low-voltage lines from the distribution transformer to all in-building wiring.

(f) Access BPL systems shall incorporate adaptive interference mitigation techniques such as dynamic or remote reduction in power and adjustment in operating frequencies, in order for Access BPL installations to avoid site-specific, localized use of the same spectrum by licensed services. Access BPL systems shall incorporate a shut-down feature to deactivate units found to cause harmful interference.

(g) Entities operating Access Broadband over Power Line systems shall supply to a Federal Communications Commission/National Telecommunications and Information Administration recognized industry-operated entity, information on all existing, changes to existing and proposed Access BPL systems for inclusion in a data base. Such information shall include the installation locations, frequency bands of operation, and type of modulation used. No notification to the FCC is required.

IV. CONCLUSION

48. In conclusion, we believe that Access BPL has the potential to offer a number of significant benefits, such as 1) increasing the availability of broadband services to homes and businesses; 2) improving the competitiveness of the broadband services market; 3) improving the quality and reliability of electric power delivery; and, 4) advancing homeland security. We believe that our

proposals contained herein to adopt new Part 15 technical and administrative rules for Access BPL will help promote and foster the development of this new technology with its concomitant benefits while at the same time ensuring that existing licensed operations are protected from harmful interference. We further believe that our proposed measurement guidelines for Access BPL and CCS will ensure that emission measurements for determining the compliance of these systems with FCC requirements are made in a consistent manner, and with repeatable results. We request comments on these conclusions and on all aspects of the proposals contained herein.

5. Corridor's technology is categorically different from the HF BPL systems that are highlighted here by the proposed definitions. The NPRM, as written, does not accurately represent the range of BPL Access technologies in existence today, with Corridor as a proof-point.

There are two implications of not accurately capturing a broad enough definition of BPL Access technologies:

- Corridor Systems may bear an inappropriate regulatory burden imposed by completely unrelated, and much more limited, technologies, and therefore,
- The benefits mentioned in "IV Conclusion" above would not be achieved.

Respectfully submitted,

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