

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Carrier Current Systems, including Broadband over Power Line Systems)	ET Docket No. 03-104
)	
Amendment of Part 15 regarding new requirements And measurement guidelines for Access Broadband over Power Line Systems)	ET Docket No. 04-37
)	

COMMENTS OF THE INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION

To: The Commission

The International Municipal Signal Association (“IMSA”) respectfully submits these comments in response to the *Notice of Proposed Rulemaking* (“NPRM”) released February 23, 2004, in the above-captioned proceeding which solicits comments on the appropriate regulatory structure for operation of Broadband over Power Lines (“BPL”).¹

Introduction

IMSA is a non-profit organization dedicated to the development and use of electrical signaling and communications systems in the furtherance of public safety. IMSA members, numbering almost 9000, include representatives of federal, state, county, city, township and borough governmental bodies, and representatives of governmental bodies from foreign nations. Organized in 1896, IMSA is the oldest organization in the world dedicated to activities pertaining to electrical engineering, including the Public Safety use of radio technology.

The Notice of Inquiry which initiated this proceeding drew more than 5000 comments. Those comments disclose a wide split between those who support BPL and those concerned

¹ 69 Fed. Reg. 12612 (Mar. 17, 2004).

about the potential for interference to other services. The Commission now proposes to allow widespread deployment of BPL under Part 15 of the Commission's rules subject to certain additional regulatory requirements. Following the issuance of the NPRM, the National Telecommunications and Information Administration of the Department of Commerce issued a report on its investigation of BPL, *Potential Interference From Broadband Over Power Line (BPL) Systems to Federal Government Radiocommunications at 1.7 – 80 MHz* (April 2004).² While this Report directly addresses the interference potential to Federal government radiocommunications systems, its findings and principles equally apply to state and local government and private radiocommunications systems as well.

The Commission proposes to allow BPL to operate as an unlicensed system under Part 15 of the Commission's rules. As such, BPL would share use of the radio spectrum with other systems, including both those licensed individually and those licensed by rule. IMSA is concerned about the potential impact on both public safety communications operating on low band frequencies, and also radio call boxes operated by its members' agencies. IMSA understands that other public safety organizations are addressing the potential impact of BPL on low band systems, and therefore submits the following comments regarding the need to protect radio call box communications.

Comments

Radio call boxes operate on 72 and 75 MHz channels, and are used by the public to request fire, police, ambulance, road service, and other emergency assistance.³ The most prevalent use of radio call boxes entails roadside locations, often directly under, or at least in proximity to, utility poles bearing power lines. It is estimated that thousands of call box systems,

² NTIA Report 04-413 ("NTIA Report"). See <http://www.ntia.doc.gov/ntiahome/fccfilings/2004/bpl/index.html>.

³ See 47 C.F.R. § 90.241.

with tens of thousands of units, are installed and functioning. In addition to highway installation, radio call boxes are installed on military installations, at airports (e.g., Chicago O’Hare), and also are connected to fire alarm control panels in protected buildings. Radio call boxes protect billions of dollars of property throughout the nation.

Radio call boxes are highly susceptible to harmful interference from co-channel BPL systems. Power is limited to 1 watt output,⁴ and they use vertically polarized antennas, which may extend only 20 feet above ground.⁵ Radio call boxes operate through a one-directional signal, sending analog modulation to remote receivers located in emergency services communications centers. Since radio call boxes do not function on a polling basis, there is no verification if the emergency signal has been received.

It is essential that radio call boxes be protected from harmful interference from BPL operations on a pro-active rather than reactive basis. Unlike two-way voice communications services wherein the interference may be detected, communications repeated or retransmitted through an alternative medium, and contact made with the BPL operator to initiate remedial actions to prevent ongoing or future problems, operators of radio call boxes have no way to detect harmful interference when, and likely not even after, it occurs. This has even more extreme implications where radio call boxes operate in conjunction with building fire alarm systems. Ideally, radio call boxes are passive devices which sit mute. In the real world, however, emergency situations occur which require third-party assistance. If a radio call box signal suffers interference and is not received, the dispatcher does not receive the call on a timely basis, if at all. No one knows why the signal did not go through.

⁴ *Id.* at § 90.241 (a) (1).

⁵ *Id.* at § 90.241 (a) (4).

The NTIA Report makes two very relevant observations which highlight the risk to radio call box operations. First, the Report states, “BPL signals unintentionally radiate from power lines . . . Current Part 15 measurement techniques may significantly underestimate the peak field strength generated by BPL systems . . .”⁶ In addition, “NTIA’s measurements show that the radiated power from the BPL energized power lines was consistently higher when the measurement antenna was placed at a greater height (*e.g.* 10 meter vs. 2 meter).”⁷ Because radio call boxes generally employ antennas located at the permitted height of 6.1 meters (20 feet) above ground, radio call boxes are a prime interference target for BPL systems operating immediately overhead.

It is clear that after-the-fact remedial measures will not protect the public safety against interference to radio call box operations. The only other alternative is for the Commission to require BPL equipment manufacturers and operators to “notch” out the radio call box channels from the BPL operating channels. Specifically, this entails 72.00-73.00 MHz and 75.40-76.00 MHz.⁸ The Commission recognizes that notching is a practical approach to protecting channels such as those used by radio call boxes from BPL generated interference.⁹ In this regard, the NTIA report states, as follows:

All spectrum regulatory agencies, including the FCC, NTIA, and the ITU have long recognized that certain frequencies or bands in the radio spectrum, including the 1.7-80 MHz range, require special protection because of the critical or sensitive functions they support. Some of these functions include: distress and safety, standard frequency and time signal, radio astronomy, and radionavigation.¹⁰

⁶ NTIA Report at 3-12.

⁷ *Id.* at 5-16.

⁸ *See* 47 C.F.R. §§ 90.241 (a) and 02.257 (a) (1).

⁹ NPRM at ¶¶ 40-41.

¹⁰ NTIA Report at 4-8.

Based on the foregoing predicate NTIA goes on to recommend protection, i.e., notching, to insulate such frequencies from BPL interference.¹¹

IMSA respectfully submits that the same rationale, and the same protective conditions, apply with regard to radio call box operations and frequencies. Whether the public safety function is performed by the federal government or by state and local governments is irrelevant to the public policy of protecting the integrity of public safety communications from harmful interference.

WHEREFORE, THE PREMISES CONSIDERED, the International Municipal Signal Association respectfully requests the Federal Communications Commission to exclude 72.00 to 73.00 MHz and 75.40 to 76.00 MHz from the spectrum permitted for broadband over power line operations.

Respectfully Submitted,

**International Municipal Signal
Association**

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¹¹ *Id.*