

BPL AT HQ: ARRL COOPERATING IN BPL SYSTEM EXPERIMENT

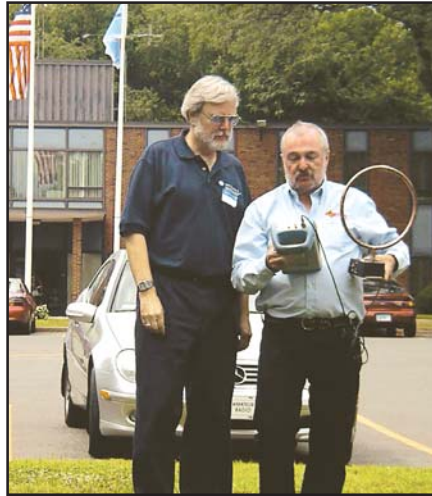
BPL has come to ARRL Headquarters, and early indications are that the newly installed Motorola *Powerline LV* system will prove Amateur Radio-friendly. Motorola approached ARRL a year ago, seeking input on a BPL design that could avoid many or most of the interference problems that have plagued some other BPL systems. This past May, Motorola introduced its *Powerline LV* wireless-to-low voltage BPL solution at the United Telecom Council's "Telecom 2005." At the time the ARRL said it was "encouraged" by Motorola's approach but reserved judgment until it had the chance to see a system up close. A Motorola *Powerline LV* system was put into operation at Maxim Memorial Station W1AW in late August.

"Theory is great, but the final proof is in how things work out in practice," says ARRL Laboratory Manager Ed Hare, W1RFI, who's been working with Motorola Principal Staff Engineer Dick Illman, AH6EZ.

Motorola says its *Powerline LV* system, which unites its Canopy wireless broadband Internet platform with enhanced ham band-notching *HomePlug* technology, drastically reduces the potential for widespread BPL interference. Illman says it does this by restricting the application of high-frequency RF to low-voltage (240 V ac) power lines instead of to the medium-voltage wires that line many residential streets. Motorola also took the *HomePlug* modem concept to the next level by adding tunable hardware filters to deepen the notches and improve the immunity of the system to nearby ham transmitters.

A Motorola Canopy wireless link has been set up between ARRL Headquarters and W1AW across the parking lot. The system's connected into the League's local area network on the Headquarters side and into a 240 V ac power drop on the W1AW end. Hare and Illman spent several days this summer checking whether the system affected Amateur Radio reception at W1AW.

"Although more testing needs to be done over the coming weeks, the initial results for Amateur Radio were positive," Hare said. "While it would be hard to



Motorola's Dick Illman, AH6EZ (left), and ARRL Laboratory Manager Ed Hare, W1RFI, check emissions from the *Powerline LV* BPL system.

envision a BPL system closer to more antennas and receivers, we found only a few dB of BPL noise on one ham band using the highest-gain antenna at W1AW aimed right at the W1AW building."

Hare and Illman also looked into the *Powerline LV* system's immunity to the interference from nearby transmitters. As they were testing the system, Hare recounts, W1AW fired up its bulletin transmissions, putting out more than 1000 W simultaneously on seven bands.

"I could hardly imagine a more difficult environment, with part of the BPL-system wiring 30 feet from W1AW's antennas," Hare remarked, "but the system continued as if the station wasn't even on the air."

Based on what he's seen so far, Hare believes that most Amateur Radio operation should be possible in proximity to a Motorola *Powerline LV* installation. The *Powerline LV* system will remain at ARRL while Hare continues to test the system.

Hare said the League remains committed to protecting Amateur Radio spectrum and hopes that this early success will encourage other BPL manufacturers to work with Amateur Radio, not against it. "I want to extend my thanks to Motorola for working proactively with ARRL," he said. "I think that together, we have made this first step a good one."