

FIELD TEST REPORT
BROADBAND-OVER-POWERLINE (BPL) COMMUNICATION INTERFERENCE TEST
for
International Broadband Electric Communications, Inc. (IBEC)
January 7, 2004

OVERVIEW

Recently, questions have been raised regarding the potential interaction and interference between BPL system transmissions and licensed Amateur Radio transmissions. IBEC claims it has implemented its BPL transmission methods specifically to avoid any interference with licensed Amateur Radio channels. To verify that IBEC's BPL system operates without interfering with Amateur Radio, IBEC engaged a licensed Amateur Radio Operator (*contact information available to interested, appropriate parties) to conduct independent interference tests over the most potentially susceptible Amateur Radio bands. These tests were performed on an existing BPL installation in Cullman, AL. This report documents the results of this independent testing.

TEST OBJECTIVE

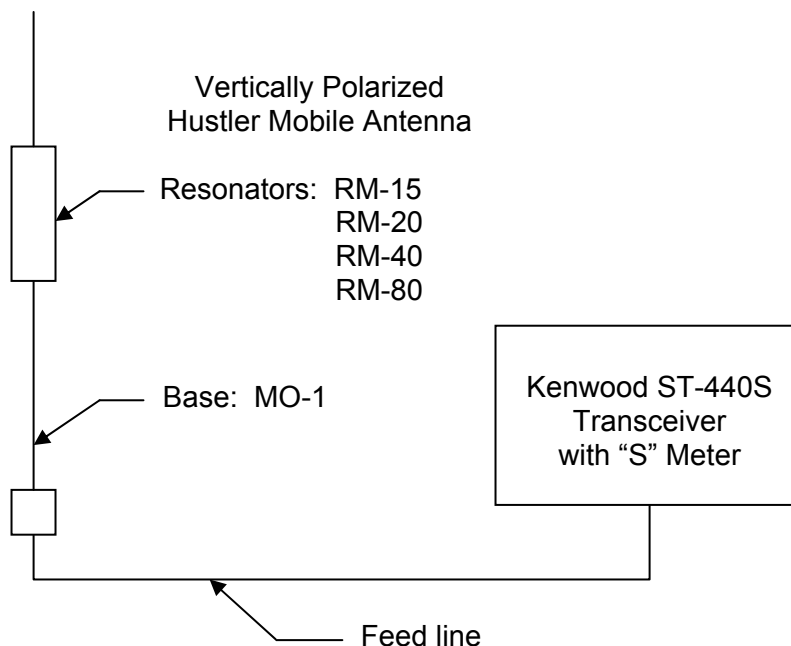
To determine the effects of BPL communications on Amateur Radio reception by measuring the magnitude of the radio frequency (RF) interference in the FCC assigned Amateur Radio RF frequency spectrums due to BPL.

METHODOLOGY

Compare the relative ambient RF interference levels with and without operational active BPL links within the FCC-assigned Amateur Radio frequency spectrums.

These RF interference levels were measured using a conventional mobile Amateur Radio receiver.

TEST CONFIGURATION



BPL COMMUNICATION INTERFERENCE TEST

January 7, 2004

Test Location: This test was performed in Cullman, Alabama on 14.4/25 KV medium-voltage distribution lines utilizing BPL transmission equipment deployed by IBEC, Inc. The Amateur Radio receiver was located 40 feet from a transmission line at the closest point and 100 feet from the pole supporting the BPL equipment. Tests were conducted between the hours of 10:00 am and 12:00 pm.

FREQUENCY MHz	RECEIVER "S" READING (dB)			RF MODE	COMMENTS
	Without Broadband	With Broadband	Nominal Delta		
80 Mtr Band					
3.990	0.8	0.8	-0-	LSB	No audible difference
4.000	0.8	0.8	-0-	LSB	" ABL
4.100	0.8	0.8	-0-	LSB	" BBS
40 Mtr Band					
6.900	0.8	0.8	-0-	CW	No audible difference BBS
7.001	0.8	0.8	-0-	CW	"
7.010	0.8	0.8	-0-	CW	"
7.290	1.6-2.0	1.6-2.0	-0-	LSB	"
7.300	1.6-2.0	1.6-2.0	-0-	LSB	" ABL
7.400	1.0-1.6	1.0-1.6	-0-	LSB	" BBS
30 Mtr Band					
9.900	0.8	0.8	-0-	CW	No audible difference BBS
10.010	0.8	0.8	-0-	CW	"
10.140	0.8	0.8	-0-	CW	"
10.150	0.8	0.8	-0-	CW	" ABL
10.250	0.8	0.8	-0-	CW	" BBS
20 Mtr Band					
13.886	1.8-2.2	2.2-3.0	0.6 (3.6 Db)	CW	Perceptual audio change BBS
13.999	1.0-1.4	1.0-1.4	-0-	CW	No audible difference BBS
14.009	1.0-1.4	1.0-1.4	-0-	CW	"
14.340	1.0-1.2	1.0-1.2	-0-	USB	"
14.350	1.0-1.2	1.0-1.2	-0-	USB	" ABL
14.450	1.0-1.2	1.0-1.2	-0-	USB	" BBS
17 Mtr Band					
17.968	0.8	0.8	-0-	CW	Barely perceptual audio change BBS
18.068	0.8	0.8	-0-	CW	No audible difference ABL
18.078	0.8	0.8	-0-	CW	"
18.158	0.8	0.8	-0-	USB	"
18.168	0.8	0.8	-0-	USB	" ABL
18.268	0.8	0.8	-0-	USB	Barely perceptual audio change BBS
19.000	0.8	1.1-2.0	0.75 (4.5Db)	USB	Audible change BBS
19.000	0.8	1.1-2.0	0.75 (4.5Db)	CW	Audible change BBS
15 Mtr Band					
20.900	0.8	0.8	-0-	CW	No audible difference BBS
21.000	0.8	0.8	-0-	CW	" ABL
21.010	0.8	0.8	-0-	CW	"

- NOTES: 1. One Amateur Radio "S" Unit = six dB
 2. ABL – Indicates Amateur Radio Band Limit
 3. BBS – This frequency is within the broadband operational spectrum.

CONCLUSIONS

1. No measured increases in RF levels or perceived audio changes were observed within the Amateur Radio Bands due to BPL operation.
2. BPL operation did generate measurable RF levels and barely audible audio changes 100 KHz above and below the 17 and 20 meter Amateur Radio bands. This illustrates the successful “notching out” of the licensed Amateur Radio frequencies, as expected.
3. A 4.5 dB increase in RF level and audible audio change was observed at 19.000 MHz during broadband operation. This increase is above the normal 3 dB threshold of audio perception. This is to be expected in that this RF frequency is well within the BPL operational spectrum. This RF frequency is 842 KHz above the 17 meter Amateur Radio Band.

** The author of this report is a licensed amateur radio operator who was engaged to conduct an independent, third-party BPL field test and document the results. Contact information for the author is available to any interested, appropriate party who wishes to discuss the field test or obtain additional information.*