Wireless Engineering

FCC report on experimental license

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On February 25th, 2008 Starkey was granted an experimental license to conduct experiments using part 15.247 devices with modifications to allow a narrower bandwidth using the provisions outlined in ET docket number 09-38, DA 09-676, in which, Starkey has filed a request for waiver of Part 15 of the Commission's rules to permit a reduction in the 6 dB-bandwidth requirements under Section 15.247(a)(2) for unlicensed operation of systems using digital modulation techniques in the 902-928 MHz (915 MHz) band. Starkey Laboratories states that its proposed system would facilitate audio enhancement capabilities for the hearing impaired via the use of digital audio equipped Assistive Listening Devices ("ALDs").

Starkey has successfully tested assistive listening devices under this experimental license in its Eden Prairie Facility and surrounding area as permitted by the license (0695-EX-PL-2007). Starkey has tested over one hundred systems in the face of multiple sources of interference without difficulty. We have a system we are testing using our experimental license that sends only a single monaural channel or a time division multiple access scheme for left and right channels with a lower bandwidth (200 KHz) and the same power spectral density requirements (8 dBm/3 KHz) as in 15.247. This experimental system occupies less bandwidth and operates with higher power efficiency than a 15.247 compliant system. Our system uses Link Quality Assessment (LQA) schemes and frequency agility to avoid interference and to prevent interference with other systems using the same band centered around 915 MHz. Our LQA system employs listen before use technology with a sensitivity of around -80 dBm as a threshold. The additional power gained from using the power spectral density over a 15.249 based power output requirement of -1.5 dBm has allowed us to operate at distances great enough to cover a small auditorium and provide much needed assisted listening for the hearing impaired subjects that have been part of our study.

In September of 2010, as part of the study, Starkey flew in students from the Oregon School for the deaf to test the system, which worked flawlessly under the experimental license. In these tests, students were asked to watch a video, listen to various speakers, and enjoy digital audio entertainment in a small auditorium. All participants rated the system high for its fidelity, range, and ease of use. All participants were able to receive streamed digital audio directly to their hearing aids without the use of any body-worn devices other than their hearing instruments. Starkey believes that this system will be a breakthrough for the hearing impaired and is hoping for a favorable decision on its waiver request ET

docket number 09-38, DA – 09-676 . These rules, if waived, will allow more efficient use of the bandwidth allocated for unlicensed operation in the 902 - 928 MHz band. Starkey through its experimental license granted by the FCC and its research and testing program has proven that using less bandwidth is more efficient and allows for more devices and applications to coexist within this bandwidth.

Sincerely,

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