

SPIEGEL & McDIARMID LLP

GEORGE SPIEGEL (1919-1997)
ROBERT C. McDIARMID
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TILLMAN L. LAY
LARISSA A. SHAMRAJ
STEPHEN C. PEARSON

1333 NEW HAMPSHIRE AVENUE, NW
WASHINGTON, DC 20036

WWW.SPIEGELMCD.COM

Telephone 202.879.4000
Facsimile 202.393.2866
EMAIL INFO@SPIEGELMCD.COM

ASSOCIATES
ELAINE C. LIPPMANN
J.S. GEBHART
REBECCA J. BALDWIN
SHARON COLEMAN
KATHARINE M. MAPES
MELISSA E. BIRCHARD

OF COUNSEL
MARGARET A. MCGOLDRICK
MEG MEISER
JEFFREY A. SCHWARZ
BARRY M. SMOLER
GLORIA TRISTANI
LEE C. WHITE

April 22, 2010

VIA ELECTRONIC FILING SYSTEM (ECFS)

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Request for Waiver of Section 15.247(a)(2), ET Docket No. 09-38 and Petition for Rulemaking to Amend Section 15.247(a)(2), RM-11523

Dear Ms. Dortch:

Pursuant to Section 1.1206 of the Commission's rules, this *ex parte* notice is filed on behalf of Starkey Laboratories, Inc. On April 20, 2010, Jeff Solum, Starkey Wireless System Architect, Daniel Schill, assistant to U.S. Senator Amy Klobuchar, and the undersigned, met with OET Chief Julius Knapp, Geraldine Matisse, Bruce Romano, Patrick Forster, Mark Settle, Karen Ansari, Rashmi Doshi and Timothy Strachan to discuss the above-referenced Request for Waiver and Petition for Rulemaking, and the matters described in the attached handouts. In addition, meeting participants discussed interference and other technical issues including Starkey's use of listen before talk (LBT) techniques.

A copy of this letter and the handouts presented during the meeting are being filed via ECFS with your office. Please do not hesitate to contact me if you have any questions.

Sincerely,


Gloria Tristani

Attachments

cc: Julius Knapp
Geraldine Matisse
Bruce Romano
Patrick Forster,
Mark Settle
Karen Ansari
Rashmi Doshi
Timothy Strachan

Starkey Laboratories, Inc. Meeting with the FCC
April 21st, 2010

Starkey Laboratories Inc. is the largest manufacturer of hearing aids in North America and is located in Eden Prairie, MN.

There are both technical reasons and benefits for the hearing impaired community that make granting Starkey's waiver request and rule modification compelling. The IEEE endorsement is a powerful one and is based on the technical merits of reducing congestion and making more efficient use of the band in the 902-928 MHz frequency range. The Hearing Industry of America (HIA) comments sum up the benefits to the hearing impaired.

Patient benefits for patients equipped with wireless hearing aids:

- Digital wireless technology incorporated in hearing instruments will provide an improved quality of life for the patients with hearing disabilities. Wireless hearing instruments will extend the age of independence for seniors and other hearing impaired Americans by maintaining and improving their ability to communicate.
- Wireless technology will allow for digital audio communication links for assisted listening devices (ALD's) used in public places and classrooms by the hearing disabled. ALD's equipped with digital RF communication play several important roles for the hearing disabled and society as a whole.
- ***Specifically the requested waiver and rule change will increase the reliability and extend the range of the wireless connectivity in hearing instruments. In addition it will extend the battery life of the hearing instrument.***

Technical benefits:

- The rule change would serve the public interest by making better and more efficient use of the available spectrum in the 902-928 MHz band. See the IEEE802.18 comments filed on this matter on May 4th, 2009.
- See also Starkey's Report on Part 15.247 devices.

Experience more.



World Headquarters
6700 Washington Avenue S
Eden Prairie, MN 55344-3476

800 328 8602
952 941 6401

starkeypro.com

Subject: Report on Devices using Part 15.247

In Starkey's waiver and rule making requests and subsequent reply comments, Starkey sites the potential inefficient use of the bandwidth by manufacturers seeking to use the higher power granted under part 15.247 if using a minimum bandwidth as specified of 500 KHz. In this report one such device is shown as an example of how the rule promotes inefficient use of the bandwidth.

Report date: 4/11/2010

Company: Comfort Audio AB

Device: Comfort Contego T900 wireless assisted listening device.

FCCID : UOJ-CG01T

In its test report filed with the FCC on January 11th 2007 The Comfort Audio device is reported to use 2-FSK with an occupied bandwidth of 500 KHz.

This device was tested at Starkey laboratories and found to have an occupied bandwidth approximately 500 KHz as shown in figure 1. and operate in the 904 to 927 MHz frequency range. The total transmitted power was measured in a calibrated anechoic chamber and found to be +5 dBm as stated in the report submitted to the FCC.

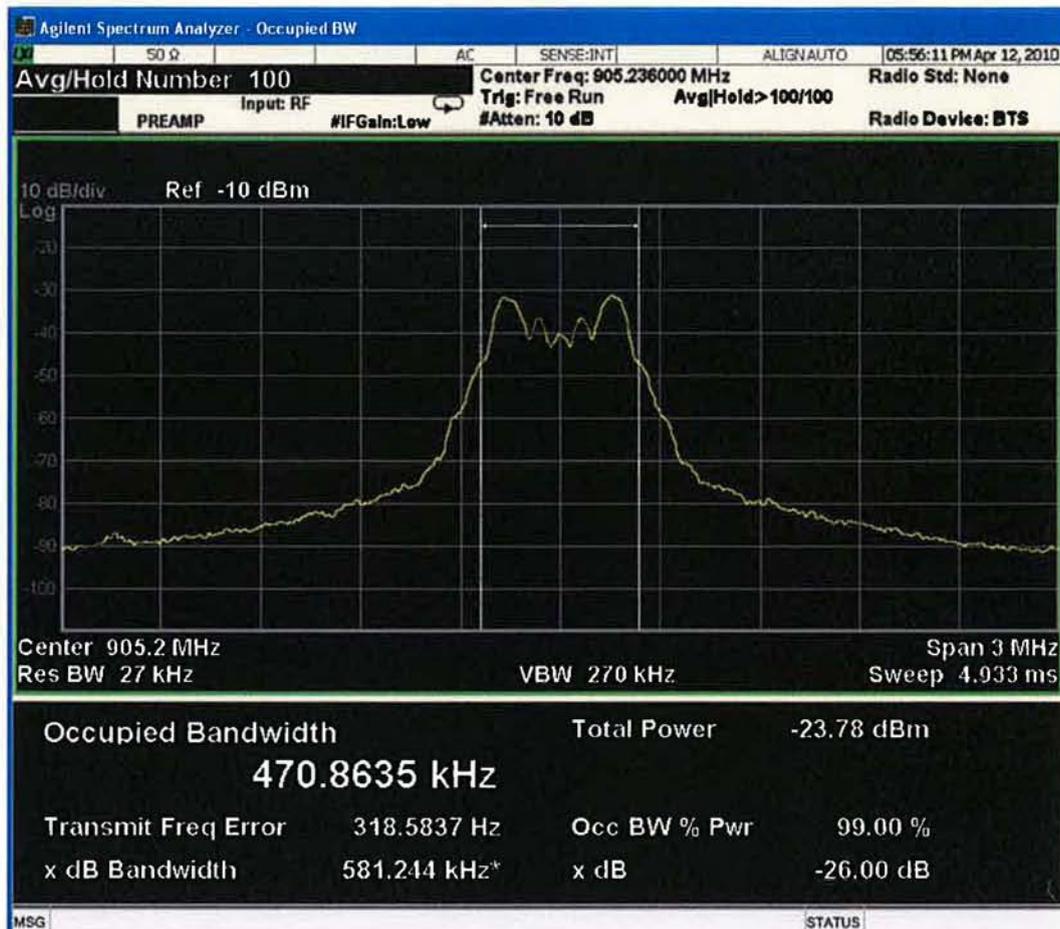


Figure 1. Occupied bandwidth.

Based on the nulls in the spectrum created by FSK Bessel functions it was determined that the symbol rate was equal to 128 KHz. The signal was then demodulated using an Agilent 8960 Vector signal analyzer. See figure 2.0

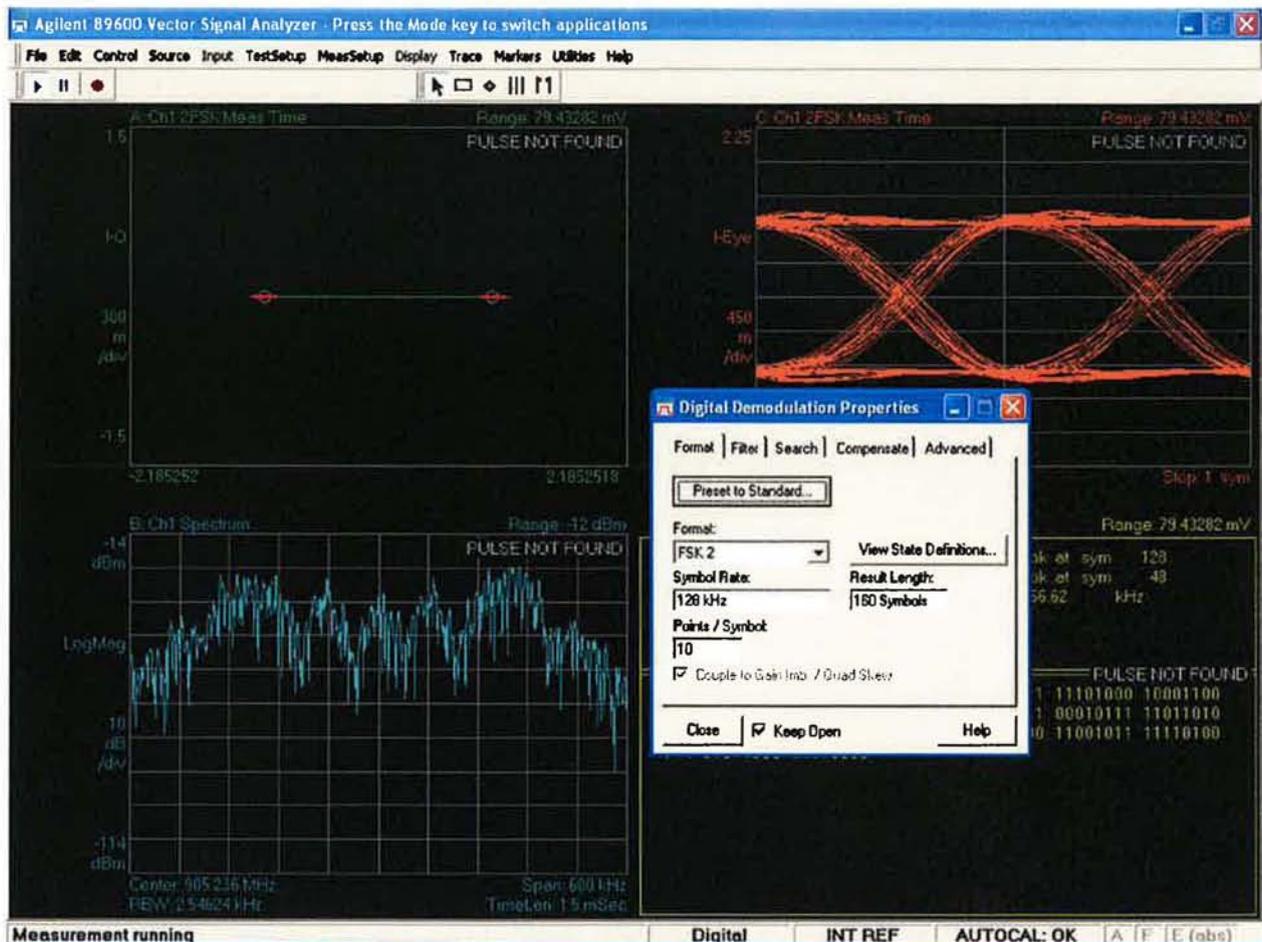


Figure 2.

The frequency deviation was measured to be approximately 340 KHz as measured and is shown in Figure 3. It shows a modulation index of $340\text{KHz}/128\text{KHz} * 100\% = 265\%$. Note that the necessary modulation index for successful demodulation of FSK is on the order of 100% or less and for MSK on the order of 40%. The obvious conclusion is that the excessive frequency deviation is used to meet the bandwidth requirement for wideband digital modulation of 500 KHz as stated in part 15.247 and not for the purpose of improved link margin. Had the Comfort Audio product been certified under the proposed rule making change of lowering the minimum bandwidth to 100 KHz the Comfort Audio system would have achieved the same link margin while using much less power (on the order of 5 dB less power).

This report is one example of the inefficient use of the band under the current rules of part 15.247.

