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"Developing Standards that Drives the Business of Communications and Information Technology"

August 1, 2005

VIA ELECTRONIC FILING

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

Re: *Ex Parte* Presentation in WT Docket No. 01-309
Section 68.4(a) of the Commission's Rules Governing Hearing Aid Compatible Telephones

Dear Ms. Dortch:

On July 28, 2005, representatives from the Alliance for Telecommunications Industry Solutions ("ATIS") Incubator Solutions Program 4 dealing with Hearing Aid Compatibility issues ("AISP.4-HAC" or "HAC Incubator") met with representatives from the Federal Communications Commission's ("FCC") Wireless Telecommunications Bureau and Office of Engineering & Technology ("OET"). At the meeting, the HAC Incubator representatives reported on the findings of AISP.4-HAC's Working Group 9 regarding the 850 MHz wireless device compliance with the FCC's Hearing Aid Compatibility (HAC) rules in the above-referenced docket.

The representatives noted that there is no discernable difference in user experience between M1/M2-rated 850 MHz wireless devices and M3-rated 1900 MHz wireless devices. The AISP.4-HAC therefore recommended that the 1900 MHz band HAC rating should be accepted as the overall rating for all dual band wireless devices. This recommendation is supported by wireless carriers, manufacturers and hearing industry representatives.

The AISP.4-HAC representatives also discussed their comments on the FCC's TCB training and their recommendations for ensuring the use of consistent methodology by test labs.

A copy of the written presentation provided to the WTB and OET representatives is attached to this letter.

In attendance, representing the WTB were Angela Giancarlo, Associate Chief, Public Safety & Critical Infrastructure Division; and Nicole McGinnis, Legal Advisor. In attendance, representing the OET were: Patrick Forster, Senior Engineer, Policy and Rules Division; Rashmi Doshi, Chief of the Laboratory Division; and Martin Perrine, Electronic Engineer, Laboratory Division. The individuals representing the HAC Incubator were: Tom Victorian, Vice President, Starkey Laboratories; Mary Brooner, Director, Regulatory Affairs, Motorola; Mel Frerking, Director of WTS, Cingular Wireless; Ben Almond, Vice President, Federal Regulatory Affairs, Cingular Wireless; James Turner, Technical Coordinator, ATIS; Martha Ciske, Committee Administrator, ATIS; and Thomas Goode, Attorney, ATIS.

Pursuant to Section 1.1206(b)(2) of the Commission's rules, one copy of this letter is being filed electronically for inclusion in the public record of the above-referenced proceeding.

If there are any questions regarding this matter, please do not hesitate to contact the undersigned.

Sincerely,

_____

Thomas Goode
Attorney
The Alliance for Telecommunications
Industry Solutions
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Attachment

ATIS Incubator Solutions Program 4 – HAC (AISP.4-HAC)

WG-9 Findings and Conclusions on 850/1900 MHz Band Hearing Aid Compatibility (HAC) Compliance

AISP.4-HAC / WG-9 Participants

- Wireless Industry
- Hearing Industry Association
- Gallaudet University – Technology Access Program
- Self Help for Hard of Hearing People
- Information Technology Technical Assistance and Training Center (ITTATC)

WG-9 Recommends the FCC Concur with the AISP.4-HAC R&O Interpretation

- AISP.4-HAC Interpretation of HAC *Report and Order* necessary to meet September 16th deadline
  - The 1900 MHz band HAC rating should be accepted as the overall rating for all dual band wireless devices
  - Use ATIS interpretation of FCC/TCB workshop comments
- Long Term Recommendations
  - Update C63.19 to reflect different rating values for 800-960 and 1880 -1910 MHz bands like the European standard
  - Update C63.19 to reflect agreements reached on interpretation of FCC/TCB workshop comments

Research Indicates 800-960 and 1850-1910 MHz Should Have Different Rating Values to Better Predict Field Performance

- Australian HA Immunity Standard AS MZS 10881.9-1995
- European Wireless Device emission standard IEC 60118-13
- Cingular Wireless Testing (2005)
- University of Oklahoma HA Subjective Validation Study Phase III-B (1999)
- DELTA - TAL Lab Study A930005-1 (2003)
- ATIS SHHH Convention User Test (2005)

Australia HA Immunity Requirements and Test Specification

5 frequency ranges

TABLE 2

TEST FIELD STRENGTH LEVELS

Frequency range (MHz)	Unmodulated carrier level, RMS (V/m)	
	C1	C2
<800	Not specified	Not specified
800 to 1 000	10	150
1 000 to 1 700	Not specified	Not specified
1 700 to 2 000	7	Under consideration*
>2 000	Not specified	Not specified

NOTE: The test field strengths in Table 2 refer to the unmodulated carrier signal. For the testing of hearing aids this carrier signal is 80% amplitude modulated with a 1 kHz sine wave.

AS NZS 10881.9-1995

IEC 60118-13: 5 DEFINED FREQUENCY BANDS

Table 1 – Field strengths of RF test signals to be used to establish immunity for bystander and user compatible hearing aids

800 to 960 MHz

1400 to 2000 MHz

	Bystander compatibility IRIL ≤ 55 dB for field strengths, E in V/m					User compatibility IRIL ≤ 55 dB for field strengths, E in V/m				
Frequency range GHz	0,08-0,8	0,8-0,96	0,96-1,4	1,4-2,0	2,0-3,0	0,08-0,8	0,8-0,96	0,96-1,4	1,4-2,0	2,0-3,0
Microphone mode	Under consider-ation	3	Under consider-ation	2	Under consider-ation	Under consider-ation	75	Under consider-ation	50	Under consider-ation
Telecoil mode[a]	Under consider-ation	3	Under consider-ation	2	Under consider-ation	Under consider-ation	Under consider-ation	Under consider-ation	Under consider-ation	Under consider-ation
Directional microphone mode[a]	Under consider-ation	3	Under consider-ation	2	Under consider-ation	Not relevant	Not relevant	Not relevant	Not relevant	Not relevant
Test field strengths are given as unmodulated carrier levels.										
[a] If provided by hearing aid.										

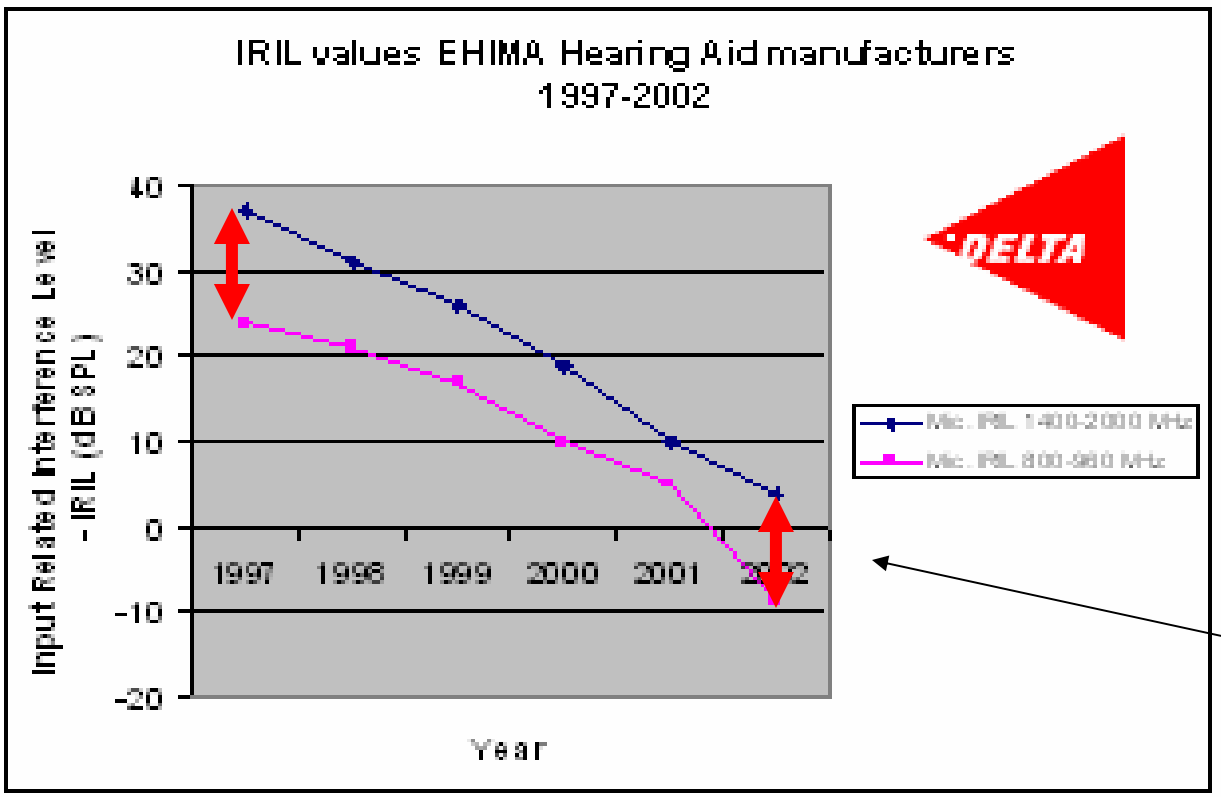
A higher field strength is required at 850 MHz to produce the same level of interference in the hearing aid. i.e. The Interference Coupling at 850 MHz is less than 1900 MHz

OU Study Data Reported in Phase III-B (October 1999)

- Pg. 5 Table 2, Summary of TUV Immunity Test Results
  - 23 Hearing Aids Tested
    - Many had greater Immunity at 850 vs 1900 MHz
      - Example: 183 V/m (850) versus 22 V/m (1900)
- Pg. 23, Paragraph 5, Sentence 1-2:
  - "It is readily apparent that there are differences in hearing aid immunity at 800 MHz vs. 1900 MHz. Any validation effort that does not consider these differences is destined to fail."

FREQUENCY BAND EFFECT: Delta Lab Report

DELTA REPORT SHOWS IMMUNITY DIFFERENCE



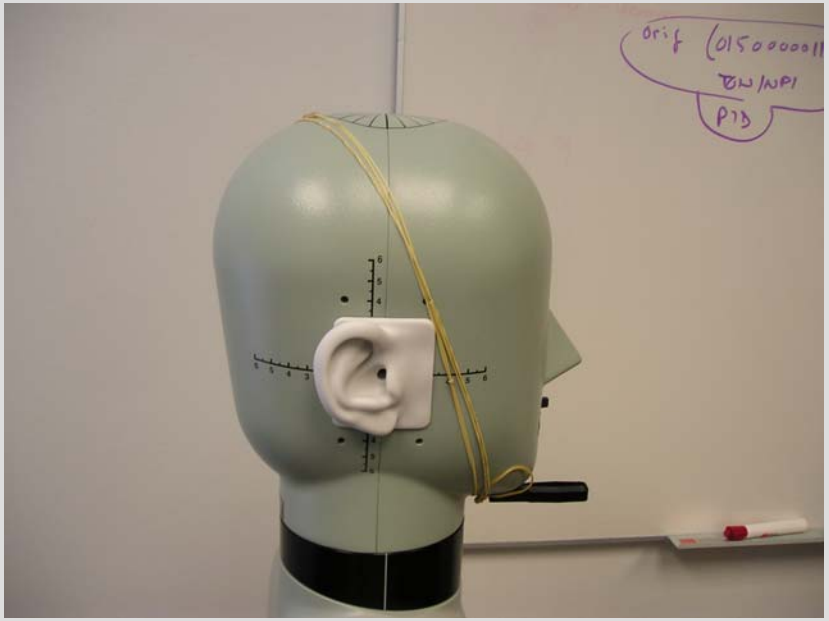
SOURCE:
Audiology Online
Hearing Aid Compatibility: Technical Update
Tom Victorian, Starkey Laboratories
12/6/2004

"Hearing Aid Frequency Band Immunity Difference"

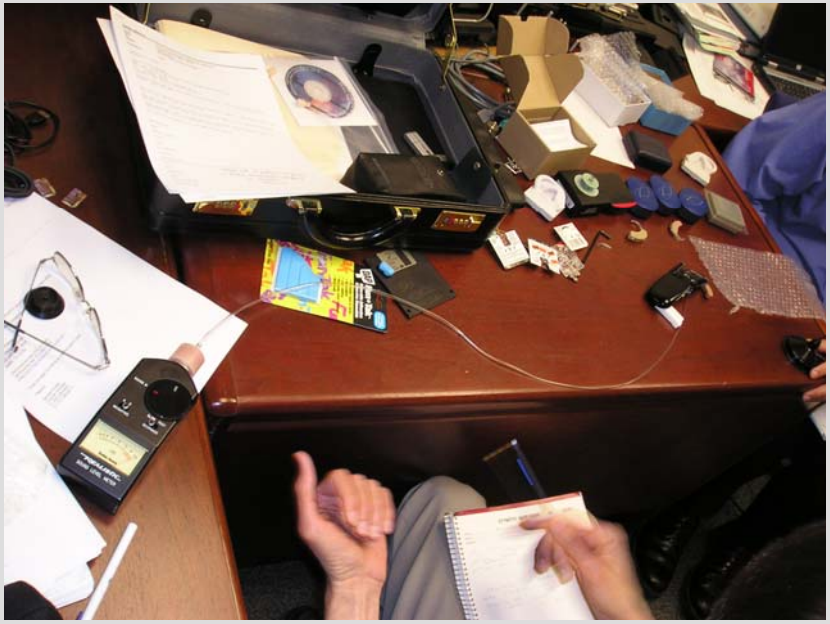
Cingular Test Data, June 2005

TEST SETUP PHOTOS: HATS & SPL METER

HATS



SPL METER



Cingular Test Data

- 12 Hearing Aids (ITE and BTE styles) with 2 GSM 850/1900 MHz wireless phones:
  - Hearing Aids (Provided by Gallaudet University & Starkey)
    - 4 different manufacturers, all but one current-generation aids
  - Wireless Phones
    - 2 different manufacturers
    - Flip style
- Of the 12 Hearing Aids tested, only 3 Hearing Aids had any noticeable interference from these wireless phones.
- The Phones were M3 in 1900 MHz band and M1/2 in 850 MHz band.
- CMU 200 with test SIM was used with a B&K 2144
- Of the 3 Hearing Aids that were susceptible, the interference induced in the hearing aid by the 850 MHz GSM wireless device operating at 2W was **LOWER** than the interference induced in the hearing aid by 1900 MHz GSM wireless device operating at 0.8W.

ATIS Test Methods at SHHH Convention, June 2005

•A CMU 200 Base Station Simulator was used to control the band and power level of the handsets

•All phones were set to max power for that band. The 1900 MHz band were M3 and were M1/2 in 850 MHz band.

850 MHz:	+33 dBm (2 Watts)
1900 MHz:	+29 dBm (0.8 Watts)

•A PC Interface was built with input screen that randomly selected 850 or 1900 MHz as a Test 1 and Test 2

•Participants asked to rate Test 1 vs Test 2

•Double blind comparison (removed potential for HA user and tester bias)

•Both male and female speakers were used for Test 1 and Test 2

•ITU speech phrases

SHHH Microphone Mode
850 vs 1900 MHz Conclusion

- Digital only HA
  - 125 tests, 10 with interference made band choice
  - 104 tests reported NO interference, therefore no difference detected between bands
  - 11 tests reported interference but no detected difference between bands
  - 10 tests reported interference AND made band choice – but half chose one band and half chose the other
    - 6 Chose 850 MHz or 60%
    - 4 Chose 1900 MHz or 40%
- Analog only HA
  - 24 tests, 7 with interference made band choice
  - 2 tests reported NO interference, therefore no difference detected between bands
  - 15 tests reported interference but no detected difference between bands
  - 7 tests reported interference AND made band choice – but half chose one band and half chose the other
    - 3 Chose 850 MHz or 43%
    - 4 Chose 1900 MHz or 57%
- Preference between the two bands was a tie despite the 4 dB power level difference indicating probable justification that an 850 MHz M2 rating produces a comparable usability experience as an 1900 MHz M3 rating

Test Conclusions

- Cingular test results, ATIS SHHH testing, and IEC 60118-13 indicate that there should be two different emissions passing limits for the 850 MHz and 1900 MHz Frequency Bands
- There is no discernable difference in user experience between M1/2 rated 850 MHz and M3 rated 1900 MHz wireless devices

Subjective Field Test

- During the interim period that C63.19 will be updated to reflect emission levels for frequency bands, the ATIS Incubator has committed to do a follow-up field study

FCC TCB Training

Allow ATIS Interpretation of FCC/TCB Workshop Comments

- Our objective is for all TCB test labs to interpret C63.19 in the same manner
- Eight comments given to OET
  - Two were accepted by FCC
  - WG-4 accepted two responses from FCC
  - The remaining 4 cause inconsistent methods applied amongst labs
- WG-4 would like to vet the remain 4 issues through C63.19
- WG-4 would like to have input to the test manual and include a reference to it in C63.19

AISP.4-HAC Final Conclusion

- 800-960 MHz band should have a different emission range from 1850-1910 MHz due to the longer wavelength of the 800 – 960 MHz band that causes less interference with Hearing Aids
- C63.19 needs to be updated to reflect this Frequency Band difference

AISP.4-HAC Interpretation

- The 1900 MHz rating should be accepted for all dual band (800-960 & 1850-1910 MHz) wireless devices until C63.19 is updated
  - The 850 MHz rating produced a comparable usability experience as the 1900 MHz due to frequency band coupling effect
- FCC should use the AISP.4-HAC interpretations of TCB training

Without FCC confirmation of the ATIS Interpretation:

- GSM handsets that pass at 1900 MHz will fail at 850 MHz and will not be considered HAC compliant for the September deadline.
- GSM Carriers would need to implement undesirable fixes. Examples:
  - HAC mode in handset that would have to be found by the user and activated
  - HAC mode would simply reduce power while in the 850 MHz band, thus reducing coverage for handset use

Long Term Recommendations

- Assign different rating values for 800-960 MHz and 1850-1910 MHz in C63.19.
  - Study issue and determine what the ranges should be.
- Resolve TCB training issues when the C63.19 standard is re-opened.

Contact Information

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Note: Detailed information on incubator testing is available on the ATIS web site – www.atis.org