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September 28, 1995

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Building The  
Wireless Future™

Mr. William F. Caton  
Secretary  
Federal Communications Commission  
1919 M Street, NW, Room 222  
Washington, DC 20554

**CTIA**

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Telecommunications  
Industry Association  
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202-785-0081 Telephone  
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**Re: Ex Parte Presentation  
RM-8653**

Dear Mr. Caton:

On Wednesday, September 27, 1995, the Cellular Telecommunications Industry Association ("CTIA") represented by Mr. Randall Coleman, Vice President of Regulatory Policy and Law; Ms. Liz Maxfield, Senior Vice President of Industry Affairs; Mr. Tom Lukish, Vice President for Health and Safety Issues; Mr. John Breaux, Director for Health and Safety Policy, and Ms. Andrea Williams, Staff Counsel, met with the following Commission staff in separate meetings to discuss issues concerning hearing aid compatibility and wireless telephones.

**Office of the Chairman**

Ms. Ruth Milkman, Senior Legal Advisor

**Office of Commissioner James H. Quello**

Mr. Rudolfo Baca, Legal Advisor

**Office of Commissioner Andrew C. Barrett**

Ms. Lisa Smith, Legal Advisor

**Office of Commissioner Rachelle B. Chong**

Mr. David Furth, Legal Advisor

**Office of Commissioner Susan Ness**

Mr. David Siddall, Legal Advisor

Received  
10/1/95

OTJ

RECEIVED  
SERQ  
At the meetings, CTIA presented the attached document. Pursuant to Section 1.1206 of the Commission's Rules, an original and one copy of this letter along with the attachment are being filed with your office. If you have any questions concerning this submission, please contact the undersigned

Sincerely,



Andrea D. Williams  
Staff Counsel

Attachment

CTIA



***Building The Wireless Future™***

**HEARING AID COMPATIBILITY  
AND  
WIRELESS TELEPHONES**

***Ex Parte* Presentation  
September 27, 1995**

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## **THE “CASUAL INTERACTION” OR “BYSTANDER” PROBLEM IS GROSSLY OVERSTATED.**

- Electromagnetic interaction (EMI) between wireless telephones and hearing aids is an *interference management issue*, not a public health/safety issue.
- The Royal National Institute for Deaf People has explained that the level of interference experienced by hearing aid users is dependent upon: **1) the power level of the GSM device, 2) the design of the hearing aid, and 3) the proximity of the GSM device to the hearing aid.** For significant interaction to occur, the distance between the phone and the hearing aid must be very short.
- The power levels of the GSM phones tested in the various European and Pacific Rim studies are two to eight times more powerful than the North American PCS 1900 phones.
- The National Telecom Agency Denmark concludes from its study that “82% of hearing aids are not disturbed by persons other than the hearing aid user using hand portable 2W telephones....This means that *only in a few cases* will there be interference with hearing aids caused by other persons using GSM telephones.” See Denmark Study at 5 (emphasis added).
- In May 1995, the National Acoustic Laboratories in Australia published the findings of a GSM/hearing aid interaction study. The study concluded that the level of interaction varies depending on the type of hearing aid. The study also demonstrated that it is possible to design hearing aids with higher immunity as well as design and use digital mobile telephones in ways to minimize the problem of interaction with hearing aids.

### **Conclusion:**

**The power level of North American PCS 1900 phones is significantly lower than the GSM phones deployed in Europe and the Pacific Rim. Thus, the level of interference will be significantly less and can be managed through cooperative inter-industry efforts. Accordingly, the scenario of “bystander” interference is not a major problem.**

## **COMPATIBILITY VS. ACCESSIBILITY**

### **The Part 68 Solution Will Not Provide Access to Wireless Telecommunications for the Hearing Impaired.**

- The nature of all wireless digital transmissions, including TDMA, CDMA, and GSM modulation, has the potential to interfere with other electronic devices, including hearing aids.
- The FCC's Part 68 Rules narrowly define hearing aid compatibility in terms of t-coil compatibility with wired telephones. The t-coil compatibility standard requires wired telephones to "leak" electromagnetic energy to achieve compatibility with the hearing aid device.
- The Part 68 Rules do not define hearing aid compatibility for CMRS devices nor provide technical standards with regard to wireless mobile service telephones.
- To meet the FCC's current HAC definition, the telephone must "leak" electromagnetic energy to achieve compatibility with a hearing aid's t-coil. The nature of digital transmission coupled with this "leakage" of electromagnetic energy creates an interaction between the digital transmission from a wireless telephone and the hearing aid in the t-coil mode.
- Similar electromagnetic interaction occurs when the hearing aid is in the t-coil mode and within close proximity to other electronic devices such as computers and fluorescent lights. As a result, hearing aid users often limit their use of the t-coil mode to wired telephone.

#### **Conclusion:**

**The FCC should focus on accessibility.**

## **Wireless Telephony Provides Access To Telephone Services For the Hearing Impaired.**

- The statutory goal of the Hearing Aid Compatibility Act of 1988 (“HAC Act”) is to ensure *reasonable access* to telephone service by hearing impaired persons.
- The FCC’s HAC Negotiated Rule Making Committee has recognized wireless telephony as a method whereby an employer may provide employees with hearing disabilities with a wireless telephone for emergency uses if the workplace floor does not have a wired telephone which is hearing aid compatibility. *See* Final Report at 22
- While the electromagnetic interaction (EMI) between wireless telephones and hearing aids is an *interference management issue*, it does not preclude hearing impaired persons from reasonable access to wireless telephone services.
- Through technological innovations and the cooperative efforts of the affected parties, hearing impaired persons can access telephone service via wireless telephony, *i.e.*, HATIS™, HATIS™-compatible wireless telephones, JABRA, and shielding.

### **Conclusion:**

**Wireless telephony has opened the door to telecommunications for the hearing impaired. The FCC should not close that door by forcing its current definition of hearing aid compatibility on wireless telephones.**

## THE FAMILY OF WIRELESS SOLUTIONS = ACCESS

- The **HATIS™** device enables those people with up to 99 percent hearing loss to access telephone services. HATIS™ works directly with a doctor's prescribed hearing aid and plugs directly into a headphone jack in adapted wireless and other telephones, as well as other electronic equipment such as TV sets, multimedia computers and stereos. In her farewell news conference, Miss America 1995 Heather Whitestone, who is profoundly deaf, was able to talk with First Lady Hillary Rodham Clinton via cellular telephone and the HATIS™ device.
- AT&T, Audiovox, Ericsson, Fujitsu, Motorola, and OKI offer **wireless telephones with HATIS™-compatible jacks**. AT&T, NYNEX, McCaw, BellSouth, Bell Atlantic and Motorola have indicated that they plan to sell the HATIS™ device as a telephone accessory. Western Wireless and Palmer Communications are in the process of working with local schools that serve hearing impaired students, providing students with the HATIS™ device and instructing them in the use of the device.
- **JABRA** is another wireless solution that provides access for persons with mild to moderate hearing loss. It is a hands-free communication device which includes an ear mold that fits into the ear canal and plugs directly into a headphone jack in a wireless digital phone. With the JABRA extension, a person with mild to moderate hearing loss can get approximately a 10db gain depending on the hearing loss.
- **Shielding, i.e., increasing the immunity level of hearing aids**, facilitates the hearing aid user's access to wireless telephone service. The Australian and European studies demonstrate that different types of hearing aids offer different levels of shielding. The studies conclude that increasing the immunity level or shielding is an effective way to manage the EMI between digital wireless telephones and hearing aids.

The technology exists whereby hearing aids can be manufactured with higher immunity levels through the use of various shielding techniques. The development of this technology is in response to the European Community's directive which requires that by January 1, 1996, all hearing aids sold in the European Community must be immune from normal digital interaction such as that from digital phones. (Note: European GSM phones have a signal which is

two to eight times more powerful than the U.S. standard for digital portable phones.

**Conclusion:**

**The wireless industry is working with the hearing impaired community and hearing aid manufacturers to ensure that hearing impaired persons have access to telecommunications services as well as providing solutions to manage the electromagnetic interaction between wireless digital telephones and hearing aids.**

## **CONCLUSION**

- **EMI between wireless telephones and hearing aids is an interference management issue.**
- **The scenario of “bystander” interference has been grossly overstated by the Petitioners, HEAR-IT NOW.**
- **Accessibility to phone service is the key and wireless telephony has provided the hearing impaired with this accessibility.**
- **The cooperative efforts of the wireless industry, the hearing aid manufacturers and the hearing aid community, not government intervention, is the most effective way to provide access to wireless telephone services.**