

DOCKET FILE COPY ORIGINAL

EX PARTE OR LATE FILED



Building The  
Wireless Future™

**CTIA**

Cellular  
Telecommunications  
Industry Association  
1250 Connecticut  
Avenue, N.W.  
Suite 200  
Washington, D.C. 20036  
202-785-0081 Telephone  
202-785-0721 Fax

May 31, 1996

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

RECEIVED

MAY 31 1996

Re: *Ex Parte* Presentation  
RM-8658

FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20541

Dear Mr. Caton:

On Thursday, May 30, 1996, Mr. Thomas E. Wheeler, President and CEO of the Cellular Telecommunications Industry Association sent the attached letter to Chairman Reed Hundt with copies to Commissioners James Quello, Rachele Chong and Susan Ness concerning the Hearing Aid Summit Process.

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

Sincerely,

Andrea D. Williams  
Assistant General Counsel

Attachment

No. of Copies rec'd  
for 8658

0+1

EX PARTE OR LATE FILED



*Building The  
Wireless Future.*

May 30, 1996

The Honorable Reed E. Hundt  
Chairman  
Federal Communications Commission  
1919 M St., NW  
Room 814  
Washington, DC 20554-0001

RECEIVED

MAY 31 1996

FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20541

**CTIA**

Cellular  
Telecommunications  
Industry Association  
1250 Connecticut  
Avenue, N.W.  
Suite 200  
Washington, D.C. 20036  
202-785-0081 Telephone  
202-331-8112 Fax  
202-736-3213 Direct Dial

**Thomas E. Wheeler**  
President / CEO

Dear Mr. Chairman:

Last September, in response to your request, the wireless industry, representatives of the hearing impaired community and hearing aid manufacturers began a process designed to address the electromagnetic compatibility (EMC) between digital wireless phones and hearing aids. Last week, the so-called "Hearing Aid Summit" process came to a close. We had been encouraged that the process seemed to be developing a consensus on key issues. Unfortunately, despite the common ground forged in several important areas, full agreement was not achieved.

Attached to this letter is a workplan which the wireless industry proposed during the Summit process. As you will see, the workplan is comprehensive and proactive. It provides for continued research, consumer education and outreach, voluntary standard-setting, and implementation of interim and long-term solutions by the wireless and hearing aid industries. The workplan includes concrete timetables for action in each of these areas. These timetables are extremely ambitious and would result in the availability to consumers of new handsets and hearing aids which avoid unacceptable interference within twenty (20) months of the completion of ongoing testing.

We believe that the Commission should build on the progress achieved in the Summit process. With the FCC's cooperation and support, the wireless industry will live up to the commitments embodied in its workplan as well as continue its partnership with hearing aid manufacturers and representatives of the hearing impaired.

The relationship between hearing aids and digital wireless devices has three dimensions: (1) interaction between some digital phones and some hearing aids, (2) "compatibility," meaning the ability to couple with a telecoil-equipped hearing aid, and (3) accessibility to the nation's wireless telecommunications infrastructure. Below, we review the disagreement.

### Hearing Aid Interaction

During the Summit process, hearing aid and wireless phone manufacturers agreed to work jointly with consumer representatives to identify an objective, measurable level of "acceptable" interaction. The hearing aid industry has led this effort and the wireless industry remains committed to identifying this objective level of interaction by September of this year. It is our expectation that the hearing aid industry and handset manufacturers will in parallel develop voluntary standards to increase hearing aid immunity while reducing emission levels.

### Telecoil "Compatibility"

With increases in hearing aid immunity, handset manufacturers should be able to tighten emissions received by the hearing aid to levels that eliminate unacceptable interference. The proposed workplan calls for interim measures to mitigate interference within eight (8) months and the availability of a cross-section of phones with integral features that eliminate unacceptable interference within twenty (20) months of the completion of ongoing research.

Despite these commitments by the wireless industry, representatives of the hearing impaired community have also advocated a requirement that every digital wireless phone have coupling compatibility with a telecoil-equipped hearing aid. I believe we are still in accord with the hearing aid manufacturers that a digital phone which is both interference free and utilizes telecoil coupling is not, today, technically feasible. Nonetheless, the industry is committed to undertaking further research to determine how soon coupling can be accomplished, both technically and economically. In the interim, our workplan calls for digital service providers to take steps to assure that individual hearing aid wearers have access to digital phones. It is important to note, moreover, that -- despite a specific exemption from the Hearing Aid Compatibility Act -- there are over two dozen analog wireless phones on the market today which feature compatibility coupling. Thus, no telecoil user is or will be denied access to the wireless infrastructure.

### Wireless Access

Research conducted at different institutions, including the Center for the Study of Wireless Electromagnetic Compatibility at the University of Oklahoma, has shown that interaction between hearing aids and digital wireless phones is brought about, in the overwhelming majority of instances, by the actual use of a phone, not by inadvertent exposure to someone using a phone a few feet away. In other words, the interaction which needs to be addressed is not a "bystander" issue, but a "user" issue.

The Honorable Reed E. Hundt  
May 30, 1996  
Page 3

Since EMC interactions are of concern to hearing aid wearers who seek to use wireless phones, solutions must be aimed at enhancing the accessibility of wireless technologies to these individual users. By its very nature, a wireless device is a personal device. The proposed workplan of the wireless industry envisions that a cross-section of digital phones will be available that contain features which prevent unacceptable interactions with hearing aids. The existence of multiple options in the marketplace -- and not a rigid requirement that every digital handset offered for sale contain the same features -- is the best way to provide hearing impaired individuals with cost-effective access to digital technology without impeding the rapid deployment of new wireless systems.

#### Creation of a Retrofit Fund

Finally, I must comment on the proposal of representatives of the hearing impaired to create a fund to replace or retrofit any hearing aid which experiences interaction with a digital wireless phone. We believe that such a fund is unnecessary given the improvements in hearing aid immunity which will occur under our workplan along with the expanded options for wireless service which will soon allow hearing aid users to select among multiple types of wireless phones. If our workplan is implemented, every user of a hearing aid will shortly be able to find a phone which provides all the benefits of digital wireless without interfering with their individual hearing aid.

Mr. Chairman, your actions stimulated the Hearing Aid Summit. We hope that the consensus which began to emerge from the Summit process will solidify so that actions can be initiated that will benefit consumers. We urge you to encourage the parties to remain fully engaged in their joint efforts so that the proposed workplan of the wireless industry can be implemented promptly. We are confident that this plan will bring about solutions much more rapidly than FCC rule making and will meet or exceed any legal requirements that might be imposed under Section 255 of the new telecommunications legislation.

I look forward to reviewing the details of the industry proposal with you and the FCC staff in the near future.

Very truly yours,



Thomas E. Wheeler

enclosure

**PROPOSAL OF THE DIGITAL WIRELESS INDUSTRY**

The following is the revised proposal of the digital wireless telephone industry (the PCS 1900 Group, CTIA, and PCIA) to mitigate interference caused by digital wireless telephones to hearing aids and to provide increased accessibility of digital wireless telephones to people with hearing loss. Implementation of the following workplan will be pursued in such a manner as to encourage the use of currently available technology and in a manner that does not discourage or impair the development of improved technology.

**PROPOSED WORKPLAN**

**I. EDUCATION (Ongoing)**

- A. Consumer support groups will initiate or continue technical assistance and education programs on interference and accessibility issues relating to hearing aids and digital wireless telephones. These programs will be coordinated with the digital wireless industry as appropriate.**
- B. The digital wireless industry will initiate or continue consumer education activities and other outreach efforts to facilitate access to digital wireless telephones by persons with hearing loss. The digital wireless industry also would like to engage in an ongoing dialogue with hearing aid consumers, hearing aid manufacturers, audiologists, and other dispensers of hearing aids to enable the industry to continue to improve accessibility to digital wireless phones for people with hearing loss throughout the product design and manufacturing process.**
- C. The American Academy of Audiology will educate audiologists and consumers about electromagnetic interference and accessibility considerations for hearing aids, digital wireless phones, and other RF devices.**
- D. In conducting these educational activities, the parties will take into account information drawn from the reports of the working groups created at the Hearing Aid Compatibility and Accessibility to Digital Wireless Telecommunications Summit Meeting on January 3-4, 1996.**

II. INTERFERENCE STUDIES

- A. Technical experts identified by the parties will compile the results of studies undertaken to identify an objective level of interference that hearing aid wearers can experience comfortably with digital wireless telephones. Specifically, test results will be compiled from the studies conducted by Mead Killion, Harry Levitt, the University of Oklahoma Center for the Study of Wireless Electromagnetic Compatibility, and other relevant scientific studies.<sup>1</sup>
- B. Based on the results of the interference studies, technical experts identified by individuals representing consumer interests and the digital wireless telephone and hearing aid manufacturing industries will reach a preliminary consensus on the objective level of interference that hearing aid wearers can experience comfortably with digital wireless telephones and that will enable the use of the service for basic communication.
- C. Based on the level of acceptable interference identified in studies reviewed and vetted, technical experts identified by individuals representing consumer interests and the digital wireless telephone and hearing aid manufacturing industries will develop a preliminary matrix with recommended performance targets for hearing aid immunity and electromagnetic emission levels. This preliminary matrix will be developed within two months of the completion of the studies and will establish a preliminary objective measure of interference that will serve as the interim benchmark until a standard is complete.
- D. Thereafter, the preliminary matrix will be submitted to the appropriate standards bodies at such bodies' next regularly scheduled meetings. The industry will take such actions as may be necessary to ensure expeditious review of the matrix for incorporation in applicable standards.

---

<sup>1</sup> The digital wireless industry anticipates that the researchers will make every effort to complete the studies that it is sponsoring by July 31, 1996. These studies shall be deemed complete when the principal researchers are satisfied that they have scientifically valid data that is available for review. However, the ability to complete these studies by this date is contingent upon the timely development of appropriate protocols, the scope of the work outlined in the protocols, the size of the studies, and other factors, including factors outside of the control of the digital wireless industry. Accordingly, specific future deadlines are estimates only and are based on the work to be completed in the studies.

III. INTERIM DIGITAL WIRELESS TELEPHONE SOLUTIONS (Within 8 months of completion of interference studies)

To the extent that it is readily achievable, the following will be accomplished:

With the goal of enabling people with hearing loss, including hearing aid wearers, to use digital wireless telephones effectively and comfortably without excessive annoyance from interference, the digital wireless industry will mitigate such interference and enhance usability through the use of interim or permanent solutions. This will be achieved in the following manner:

- A. Interference. To the extent that it is readily achievable, there will be a variety of digital wireless telephones that have features that are integral to the design of the telephone and that may include, but will not be limited to, a range of accessories, circuitry changes, changed antenna positions, and/or reduced magnetic emissions, as demonstrated to be effective in mitigating interference.<sup>2</sup> Efforts to mitigate interference will take into account the hearing aid wearer's degree of hearing loss and the varying degrees of immunity in hearing aids.
- B. Accessibility. Providers and manufacturers of digital wireless telephone services and equipment also will offer options to provide accessibility to digital wireless telephones for people with hearing loss. Based on the recognition that there are many different kinds of hearing loss, that digital wireless telephones are personal devices, and that there may be many different potential solutions within the definition of accessibility set forth in Section VII below, service providers will work, in the manner that they deem appropriate, to provide accessibility to digital wireless phones for individuals with hearing loss.

IV. COMMERCIAL AVAILABILITY OF LONG-TERM DIGITAL WIRELESS TELEPHONE SOLUTIONS (Within 20 months of completion of interference studies)

To the extent that it is readily achievable, through a combination of further changes to digital wireless telephones made in the manner deemed appropriate by individual manufacturers and through increased hearing aid immunity, the following will be accomplished:

---

<sup>2</sup> Features that are integral to the design of the digital wireless telephone may or may not be built into the telephone. Such features may include accessories that are designed for use with the phone or that are distributed with the phone.

- A. Interference. A representative cross-section of digital wireless phones will be manufactured and available in the U.S. that have features that are integral to the design of the telephone, including (but not limited to) built-in features, and that limit interference to no greater than the objective level that wearers of hearing aids with increased immunity (see Section V) can experience comfortably with digital wireless telephones.
- B. Accessibility. A representative cross-section of digital wireless phones will be manufactured and available in the U.S. that, through features that are integral to the design of the telephone or otherwise, are accessible to persons with hearing loss, including hearing aid wearers. Providers and manufacturers will offer, in the manner that they deem appropriate, various options to provide accessibility to digital wireless phones for people with hearing loss. This Section recognizes that there are many different kinds of hearing loss, that digital wireless telephones are personal devices, and that there may be many different potential solutions within the definition of accessibility set forth in Section VII below.

V. IMPROVED HEARING AID IMMUNITY (Within 20 months of completion of interference studies)

To the extent that it is technologically feasible, a representative cross-section of hearing aids sold in the United States will be available with built-in immunity to electromagnetic interference in conformance with two standards currently being developed by ANSI C63.

VI. ADDITIONAL PROVISIONS

- A. Throughout this process and beyond the completion date of this workplan, the digital wireless industry will continue to conduct research with the goal of ensuring increased accessibility to digital wireless phones for people with hearing loss. The research will include continuing to investigate the feasibility of achieving compatibility through internal coupling of digital wireless telephones to the hearing aid telecoil, and testing proposed accessibility solutions against a wide range of hearing aids of various immunity levels.
- B. The studies identified in Section II will identify the acceptable level of interference, and this will be submitted for use by appropriate standards bodies. In the event that research demonstrates that bystander interference from digital wireless telephones exceeds this objective level of interference, to the extent readily achievable, the

## REVISED PROPOSAL -- April 29, 1996

digital wireless industry, working with hearing aid manufacturers, will seek to mitigate bystander interference.

- C. Digital wireless telephones with varying levels of features and capabilities are and will be increasingly available to American consumers. The digital wireless telephone industry recognizes that people with hearing loss, like all consumers, desire access to the broadest possible range of digital wireless telephones, and that they not be limited to only the most expensive and feature-rich, or the most basic and inexpensive, units.
- D. The digital wireless telephone industry will investigate the feasibility of standardizing access connections to digital wireless telephones.

### VII. DEFINITIONS

- A. Accessibility - A digital wireless telephone is accessible to hearing aid wearers if it either: 1) provides compatibility through internal coupling of the digital wireless telephone to the hearing aid telecoil, or 2) provides audibility and intelligibility needed for basic communication.
- B. Digital Wireless Telephones - Radio frequency based, wireless telephones utilizing digital transmission formats over an air interface, including but not limited to CDMA, TDMA, and PCS 1900, and regulated under Parts 22 and 24 of the Rules of the Federal Communications Commission.
- C. Hearing Aid - A professionally dispensed, wearable air-conduction, sound-amplifying device that is intended to compensate for impaired hearing.
- D. Interference - Noise caused by a digital wireless telephone that interferes with a person's ability to use a digital wireless telephone and a hearing aid effectively and comfortably at the same time.