

Hearing Aid Compatibility for Wireless Telephones

Background

The Hearing Aid Compatibility Act of 1988 (HAC Act) generally requires that the Federal Communications Commission (FCC) ensure that telephones manufactured or imported for use in the United States after August 1989, and all “essential” telephones, are hearing aid-compatible. When Congress passed the Act in 1988, it specifically exempted “telephones used with public mobile services” (wireless telephones) from these requirements. To ensure that the HAC Act kept pace with the evolution of telecommunications, however, Congress granted the FCC a means to revoke or limit the exemption for wireless telephones. On August 14, 2003, the FCC determined that continuation of a complete exemption for wireless telephones would have an adverse effect on individuals with hearing disabilities, and that limiting the exemption was technologically feasible and in the public interest. Based upon these findings, the FCC established rules for the hearing aid compatibility of digital wireless phones.

What Makes a Phone Hearing Aid Compatible?

Hearing aids operate in one of two modes – acoustic coupling or telecoil (inductive) coupling. Hearing aids operating in acoustic coupling mode receive and amplify all sounds surrounding the user; both desired sounds, such as a telephone’s audio signal, as well as unwanted ambient noise. Hearing aids operating in telecoil coupling mode avoid unwanted ambient noise by turning off the microphone and receiving only signals from magnetic fields generated by telecoil-compatible telephones. In the United States, about 60 percent of hearing aids contain telecoils, which generally are used by individuals with profound hearing loss.

A telecoil is a small, tightly-wrapped piece of wire inside the hearing aid that, when activated, picks up the voice signal from the electromagnetic field that leaks from compatible telephones. While the microphone on a hearing aid picks up all sounds, the telecoil will only pick up an electromagnetic signal from the telephone. Thus, users of telecoil-equipped hearing aids are able to communicate effectively over the telephone without feedback and without the amplification of unwanted background noise. Telecoils can only fit in two styles of hearing aids: “In-The-Ear” and “Behind-The-Ear” aids. Most smaller hearing aids are not large enough to fit the telecoil. Many people report feedback (or squealing) when they place a telephone next to their hearing aid. When placed correctly, telecoils can eliminate this feedback because the hearing aid microphone is turned off and the hearing aid only amplifies the signal coming through the telecoil. Some hearing aid users may need to place the telephone slightly behind the ear rather than directly over the ear to obtain the clearest signal.

The ability to make wireless telephones compatible with hearing aids also depends in part on other technical and design choices made by carriers and manufacturers. For example, for technical reasons, it is easier to meet hearing aid compatibility standards on systems that use a Code Division Multiple Access (CDMA) air interface (including Verizon Wireless and Sprint Nextel) than on systems that use a Global System for Mobile (GSM) (such as AT&T Mobility and T-Mobile) air interface. It is also easier to meet hearing aid compatibility standards in phones with clamshell (or “flip”) designs than in “candy bar” or other styles. Therefore, consumers may generally find more models that meet hearing aid compatibility standards available from CDMA carriers and in clamshell designs.

Many newer phones can also provide voice communications using a third-generation (3G) air interface called Wideband Code Division Multiple Access (WCDMA) (also sometimes called Universal Mobile Telecommunications System (UMTS)). In general, it is easier to meet hearing aid compatibility standards over the WCDMA air interface than over GSM. However, if a phone operates over both the GSM and WCDMA air

interfaces and does not meet hearing aid compatibility standards over GSM, it will be rated as not hearing aid-compatible even if it meets the standards over WCDMA.

What Are the FCC Requirements for Hearing Aid Compatibility for Digital Wireless Telephones?

Analog wireless telephones usually do not cause interference with hearing aids. Digital wireless telephones, on the other hand, sometimes cause interference because of electromagnetic energy emitted by the telephone's antenna, backlight or other components. Therefore, the FCC has adopted specific hearing aid compatibility rules for digital wireless telephones.

The standard for compatibility of digital wireless phones with hearing aids is set forth in American National Standard Institute (ANSI) standard C63.19. A digital wireless handset is considered hearing aid-compatible for inductive coupling if it meets a "T3" (or "U3T") rating under the ANSI standard.

In addition to rating wireless phones, the ANSI standard also provides a methodology for rating hearing aids from M1 to M4, with M1 being the least immune to RF interference and M4 the most immune. To determine whether a particular digital wireless telephone is likely to interfere with a particular hearing aid, the immunity rating of the hearing aid is added to the rating of the telephone. A sum of four would indicate that the telephone is usable; a sum of five would indicate that the telephone would provide normal use; and a sum of six or greater would indicate that the telephone would provide excellent performance with that hearing aid.

Are Hearing-Aid-Compatible Digital Wireless Phones Available?

To ensure that sufficient hearing aid-compatible digital wireless phones complying with the ANSI standard are available, the FCC set benchmark dates by which digital wireless handset manufacturers and service providers had to gradually increase the number of hearing aid-compatible digital wireless phones available to consumers. The currently applicable benchmarks are as follows:

For Acoustic Coupling

- Each handset manufacturer must meet at least an M3 rating for one third of the handset models that it offers to service providers per digital air interface. If one third of the manufacturer's handset models works out to a fraction, the manufacturer may round the result down.
- Each nationwide wireless service provider (Verizon Wireless, AT&T Mobility, Sprint Nextel and T-Mobile) must meet at least an M3 rating for 50 percent or eight of the handset models it offers to consumers, whichever is less, per digital air interface. For service providers that do not meet the 50 percent threshold, the minimum number of compatible models required increased to ten on February 15, 2010.
- Each non-nationwide wireless service provider must meet at least an M3 rating for 50 percent or eight of the handset models it offers to consumers, whichever is less, per digital air interface. For service providers that do not meet the 50 percent threshold, the minimum number of compatible models required, increased to ten on May 15, 2010.

For Inductive Coupling

- Each handset manufacturer must offer at least two T3-rated handset models per digital air interface. In addition, manufacturers have to ensure that one third of their handset models per air interface meet at least a T3 rating. If this percentage works out to a fraction, the manufacturer may round the result down; however, any manufacturer offering four or more handset models over a digital air interface must offer at least two that meet a T3 or higher rating.
- Each wireless service provider must meet at least a T3 rating for one third or ten of the handset models it offers to consumers, whichever is less, per digital air interface.



These numbers are minimum requirements, and manufacturers and service providers may offer more qualifying handsets if they choose. In addition, manufacturers are required to partially refresh their offerings of hearing aid-compatible phones each year, and service providers must offer a range of hearing aid-compatible phones with differing levels of functionality.

The FCC allows a “de minimis” exception to its requirements for handset manufacturers and wireless service providers offering a small number of hearing aid-compatible handsets. Under this exception:

- Wireless service providers and handset manufacturers that offer two or fewer digital wireless handsets in the U.S. for a particular air interface need not offer hearing aid-compatible handsets.
- Wireless service providers and handset manufacturers that offer three digital wireless handsets in the U.S. for a particular air interface must offer at least one hearing aid-compatible handset model.
- Beginning September 8, 2012, wireless service providers and handset manufacturers that are not small entities under Small Business Administration standards, and that have been offering handsets over a digital air interface for at least two years, will no longer qualify for the de minimis exception. All such service providers and manufacturers will be required to offer at least one hearing aid compatible model for acoustic coupling and for inductive coupling per air interface."

Are There Labeling and Testing Requirements

Packages containing hearing aid-compatible handsets must be explicitly labeled and must include detailed information in the package or product manual. Wireless service providers must offer a means for consumers to test hearing aid-compatible handsets in their owned or operated retail stores.

Some hearing aid manufacturers are voluntarily including information about hearing aid compatibility with their products. Wireless service providers are also offering similar information in their owned or operated retail stores and are training employees to help persons with hearing aids. This information and the package labeling required by the FCC help persons with hearing aids make fully-informed decisions about purchasing their hearing aid-compatible wireless phones.

Since January 15, 2009, manufacturers and service providers have been required to post information about their hearing aid-compatible handset offerings on their websites.

Some handsets are capable of using wireless technologies, such as Wi-Fi, for which hearing aid compatibility technical standards have not yet been adopted by the FCC. If a handset includes such a technology, the packaging material and other disclosures must inform consumers that such operations have not been tested for use with hearing aids. This disclosure does not necessarily mean the phone will not be compatible with a hearing aid; it only means that these operations cannot be tested.

Try Before You Buy

Be sure to try your wireless device with your hearing aid in the store before making your purchase. It's best to try several models before buying to find the best match with your hearing aids. Visit a full service carrier store and ask to try devices that have been designated as “hearing aid compatible.” Your cell phone’s RF emissions can change depending on your location. Be sure to fully evaluate your listening experience outside and during the return period. Read the fine print on the return policy, as well as any early termination fees before signing up for any new cell phone or service.

Filing a Complaint With the FCC

If you have a problem using a hearing aid with a digital wireless phone that is supposed to be hearing aid-compatible, first try to resolve it with the equipment manufacturer or your wireless service provider. If you can't resolve the issue directly, you can file a complaint with the FCC. There is no charge for filing a complaint. You can file your complaint using an online complaint form found at www.fcc.gov/complaints. You can also file your



complaint with the FCC's Consumer Center by calling 1-888-CALL-FCC (1-888-225-5322) voice or 1-888-TELL-FCC (1-888-835-5322) TTY; faxing 1-866-418-0232; or writing to:

Federal Communications Commission
Consumer and Governmental Affairs Bureau
Consumer Inquiries and Complaints Division
445 12th Street, S.W.
Washington, DC 20554

What to Include in Your Complaint

The best way to provide all the information the FCC needs to process your complaint is to thoroughly complete the online complaint form. When you open the online form, you will be asked a series of questions that will take you to the particular section of the form you need to complete. If you do not use the online complaint form, your complaint should at least indicate:

- your name, address, email address and phone number where you can be reached;
- preferred format or method of response (letter, fax, voice phone call, email, TRS, TTY, ASCII text, audio recording or Braille);
- that your complaint is about hearing aid compatibility for a digital wireless telephone;
- the make and model number of the equipment or device you are complaining about;
- the name, address and telephone number (if known) of the company or companies involved in your complaint; and
- a brief description of your complaint and the resolution you are seeking, and a full description of the equipment or service you are complaining about, including date of purchase, use or attempt to use.

For More Information

For information about hearing aid-compatible wireline telephones, see our consumer guide at www.fcc.gov/guides/hearing-aid-compatible-wireline-telephones. For more information about FCC programs to promote access to telecommunications services for people with disabilities, visit our Disability Rights Office website at www.fcc.gov/disability.

A list of all equipment manufacturers and service providers are listed at www.fcc.gov/cgb/dro/section255.html.

For information about other communications issues, visit the FCC's Consumer and Governmental Affairs Bureau website at www.fcc.gov/consumers, or contact the FCC's Consumer Center by calling 1-888-CALL-FCC (1-888-225-5322) voice or 1-888-TELL-FCC (1-888-835-5322) TTY; faxing 1-866-418-0232; or using the information provided for filing a complaint.

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