

Transmitter

A microphone used by the speaker or located near the television or other sound source is connected to a transmitter used to relay the sound to the assistive listening device. The transmitter sends the signal via FM, infrared, loop, or patch cord to a receiver used by the listener which, in turn, converts the signal into the original sound source that can be amplified by the assistive listening device.

Receivers

Receivers are portable and small, usually pocket sized. Receivers are equipped with a volume control that allows the user to amplify the sound. Receivers are usually compatible with various listening attachments such as earbuds, headphones, T-coil neckloops or patch cords to connect to hearing aids or cochlear implants.



Need Help?

Feel free to contact the Illinois Deaf and Hard of Hearing Commission for assistance in determining what assistive listening devices may benefit you.

Check our website at www.idhhc.state.il.us for links to information sources on assistive technology. There you can search for products and find specifications and compatibility for many different types of assistive listening equipment.



ASSISTIVE LISTENING DEVICES



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Assistive Listening Devices

Assistive Listening Devices are designed to help people hear better in a variety of difficult listening situations. Listening in groups, meetings, restaurants, lectures, theaters, or in one-on-one conversations is not only influenced by environmental noises but also by the distance between the speaker and the listener. Assistive listening devices can bring sound directly to your ears without increasing background noise. Assistive listening devices can be used with a hearing aid equipped with a T-coil or without hearing aids by wearing earbuds or headphones. Assistive listening devices include Personal, FM, Infrared, Loop, and Television Systems.

People with a hearing loss who have difficulty following conversations or understanding the radio, television programs or a speaker with or without a hearing aid or cochlear implant may benefit from an assistive listening device. Consulting an audiologist is the best way to determine which type of assistive listening device is most appropriate for an individual's particular hearing loss.

What is an Assistive Listening Device?

Assistive listening devices increase the audible level of specific sounds such as a radio, television or a speaker by targeting and increasing the reception of particular sounds or speech. An assistive listening device brings the sound directly to your ears without increasing background noises.

What about Hearing Aids?

Hearing aids amplify all sounds, including environmental sounds that can interfere with targeted sounds, such as speech. Hearing aids work well only when the listener is in close proximity to the speaker or in a quiet environment. If used in a noisy environment, the hearing aid will pick up all sounds including the speaker which can be confused and distorted. Hearing aids cannot pick up sounds if you are far away from the speaker. However, an assistive listening device used in conjunction with a hearing aid equipped with a T-coil may increase the reception of targeted sounds. A T-coil is an interactive mechanism integrated into some, but not all, types of hearing aids. Check with the hearing aid manufacturer for compatibility with Assistive Listening Devices. Hearing Aids are not required in order to use an assistive listening device.

What Kinds of Assistive Listening Devices are Available?

Many different products are available from personal units for individual use to highly sophisticated systems designed for multiple users in a large area such as an auditorium. Assistive listening equipment also varies by the types of transmission used to carry sound from the source to the ear of the person using the device.

FM uses a specific radio frequency (generally 72-76 MHz) to carry sound from the transmitter to the receiver. An FM system uses one or more transmitters (microphone or base station) and one or more receivers, which are set to the same frequency. FM systems are the most versatile since they are portable and can operate in a relatively large area. Both the listener and speaker have complete mobility.

Infrared uses invisible infrared light waves to carry sound from the transmitter to the receiver. The infrared system uses a single transmitter and one or more receivers, which must be on the same channel (95 KHz, 250 KHz and 2.3 MHz). The receiver converts the infrared light waves back into sound, which can then be amplified. Infrared uses of line-of-sight technology and cannot travel through walls.

Loop (Audio Induction Loop) generates an electromagnetic field by using a wire antenna "loop" that surrounds a room. The wire is portable or can be permanently installed. A transmitter circulates a signal through the loop wire creating a magnetic field. Hearing aid users switched to "T-coil" will pick up the signal when they are within the "looped" area and those without hearing aids can use audio loop receivers with headphones.