



# Hearing Assistive Technology Systems (HATS)

## Content contributed by

ASHA member Lindsey Jorgensen, AuD, CCC-A, PhD. and Kristine Hunt, BS

Hearing Assistive Technology Systems (HATS) are systems that assist with hearing in different environments. This chart breaks down HATS into the following categories: alerting devices, devices to help in noise, loop system devices, devices that assist with telephones and television, and pediatric considerations for children with hearing loss.

## ALERTING DEVICES

Alerting devices provide vibration or light flashes in response to sound. These devices are often used for doorbells, telephone ringers, fire alarms, baby monitors, and alarm clocks. New parents with hearing loss may want alerting baby monitors to let them know when their baby is crying.

## DEVICES TO HELP IN NOISE AND AT A DISTANCE

FM systems and Bluetooth devices help listeners in noisy settings or when they are at a distance from the speaker. Both use wireless technology to transmit sound from a microphone at the sound source to a receiver worn by the person with hearing loss. Each may be used with or without hearing aids or cochlear implants. They are useful in noisy places like restaurants, classrooms, conferences, senior centers, and places of worship.

## LOOP SYSTEM DEVICES

Induction loop systems are often used in public areas. Loops are located throughout the walls/floors of a specific area. These induction loops transform the sound to magnetic force. Sound from a microphone is transmitted through the loop as a magnetic signal. The signal is received by a listener with hearing aids, cochlear implants, or other devices that have a telecoil which changes the signal back to a sound.

## TELEPHONES

Amplifiers make both the ringing sound and speaker's voice louder. Bluetooth devices or telecoils can connect hearing aids or cochlear implants directly to the telephone to make the signal clearer. Captioning transcribes speech into writing on an attached screen in real time.

## TELEVISION

Infrared systems convert sounds from the TV to infrared waves that are sent to the listener's infrared receiver and changed back to sound. Bluetooth devices can be used to connect hearing devices directly to the television. Sometimes, intermediary devices may be used to connect the hearing device to the TV via an FM or Bluetooth signal.

## PEDIATRIC CONSIDERATIONS

Children with hearing loss may benefit from HATS. Classroom Auditory Distribution Systems (CADS) can be useful in school settings. These are sound field systems. The teacher wears a microphone. A separate microphone is shared by students. The sound is sent from the microphone to speakers in the classroom. Portable personal amplifiers help with one-on-one conversations. The speaker wears a microphone that transmits sound to the listener's device. Personal FM systems are another beneficial tool for children with hearing loss in classroom settings. Educational audiologists can help determine appropriate classroom HATS for each child.



For more information about hearing assistive technology, hearing aids, hearing loss, balance problems, preventing falls, or referral to an ASHA-certified audiologist, contact:

**ASHA Audiology**

2200 Research Boulevard, Rockville, MD 20850

800-638-8255

Email: [audiology@asha.org](mailto:audiology@asha.org)

Website: [www.asha.org](http://www.asha.org)

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