

## ASSISTIVE LISTENING: FM SYSTEMS AND VOICE AMPLIFICATION

Traditionally, assistive listening devices (ALDs) are devices used by people with hearing loss to help access auditory information. However, ALDs can also be used by people who may have hearing within normal limits, but have trouble actually processing the information (Central Auditory Processing Disorder, or CAPD), distinguishing what is being said from background noise, or paying attention to the speaker. Voice amplification systems are sometimes helpful to people who have faint voices due to voice or throat illness. This issue of *AT Focus* profiles devices in the Lending Library from both of these categories.

Traditionally, assistive listening devices (ALDs) are devices



### Desktop Sound Field "Connectable" System

This desktop system is called "connectable" because it is meant to go with an existing personal FM system. The unit consists of a portable speaker that is about the size of a lunch box, inside a convenient tote bag, two cables (2.5 and 3.5 mm), and rechargeable batteries.

Inventory code: HH-PFM-DESK; Cost: \$198; TeachLogic, 800-588-0018, [www.teachlogic.com](http://www.teachlogic.com).



### Quantum Sound Field System

The Quantum is a portable, plug-and-play wireless sound system that can be used for classrooms, conference rooms and similar locations. Included with this system is a lapel microphone with transmitter, a handheld microphone, and a drop-in charging stand. The compact (14.5" H x 6" W x 4.5" D, 5 lbs.) speaker has a built-in receiver and two external sensor inputs. A convenient carry case holds everything.

Inventory code: HH-PFM-QUANT; Cost: \$771, TeachLogic, 800-588-0018, [www.teachlogic.com](http://www.teachlogic.com).



### Spectrum Sound Field System

This sound field system is specifically for small rooms (up to 2,000 sq. ft.). The base station has an integrated amplifier and dual channel receiver, and additional line inputs for a personal FM system, computer, television, projector or other audio device. Each input jack has a separate volume control. There are two external sensors with 30' cables that can be mounted on the

wall, and two handheld, rechargeable microphone/transmitters.

Inventory code: HH-PFM-SPEC; Cost: \$942; TeachLogic, 800-588-0018, [www.teachlogic.com](http://www.teachlogic.com).

- 1 • Desktop Sound Field "Connectable" System
  - Quantum Sound Field System
  - Spectrum Sound Field System
- 2 • Personal Desktop FM System
  - Personal FM System
  - Portable Infrared Classroom Amplification System
  - Listen Personal Value Pack Kit
  - Radium Column Speaker System
- 3 • Toteable PFM PE 300 Sound Field System
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### Personal Desktop FM System, LES-391

The LES-391 SoundPak™ System is a desktop system, which means that instead of headphones, the sound comes through a desktop speaker (7.25" W x 4.4" H x 3.75" D). The speaker talks into a wireless microphone and the SoundPak amplifies their voice. The system includes a desktop receiver/amplifier, belt-pack transmitter, and headset microphone. With fully charged batteries, the receiver will operate for approximately 10 hours, while the transmitter will work for about 20 hours. The carrying case makes it easy to transport.

Inventory code: HH-PFM-LES391;

Cost: \$795;

LightSPEED, 800-732-8999,  
www.lightspeed-tek.com.



### Personal FM System, LES-370 (not pictured)

This small, lightweight system includes a belt-pack receiver, belt-pack transmitter, carrying case, and headphones that are adjustable for smaller children. The system is rechargeable and will run for about 20 hours on a full charge.

Inventory code: HH-PFM-LES370; Cost: \$440; LightSPEED,  
800-732-8999, www.lightspeed-tek.com.



### Listen Personal Value Pack Kit

This system is ideal for use in classrooms, worship services, or anywhere where there is an individual who may be hard of hearing. This system works with a transmitter and a microphone that can either be worn or set up on a podium. The receiver and earphone are then worn by the listener, who can sit up to 150 feet away and still clearly hear the speaker. The system comes complete with an FM body pack transmitter, two FM personal receivers, a lavalier microphone, earphones, and one soft transporting case for the entire system.

Inventory code: HH-LIST; Cost: \$735; Harris Communications, 800-825-6758,  
www.harriscomm.com, info@harriscomm.com.



### Portable Infrared Classroom Amplification System, LES-705

This is an infrared (wireless) system that will amplify sound for an entire classroom or room of similar size. The system consists of a receiver/amplifier (13.25" H x 5.75" W x 4" D, 5 lbs), a LightMic™ transmitter (worn by the speaker), one handheld microphone, and a carrying case. It is capable of accepting audio input from other sources (TV, CD, PC, etc.), and can send audio to personal FM systems or recorders.

Inventory code: HH-PFM-LES705; Cost: \$900; LightSPEED, 800-732-8999, www.lightspeed-tek.com.



### Radium Column Speaker System

Radium is a two-channel, FM system equipped with two speakers and a receiver located in a single column. This system gives good quality coverage of average size classrooms or groups in indoor or outdoor environments. The built-in battery can run for up to eight hours continuously, and the column can also be powered through a standard electrical outlet. Radium has the ability to operate properly in up to 10 adjacent classrooms, and also allows another teacher or student the option of speaking at the same time on a second channel using the handheld transmitting microphone.

Inventory code: HH-PFM-RADIUM; Cost: \$1,322. Note: The manufacturer now calls this system FrontRow To Go. Contact: FrontRow, 800-227-0735, www.gofrontrow.com.



### Toteable PFM PE 300 Sound Field System

This small, lightweight, portable device consists of a tote bag with a built-in speaker/amplifier, and a personal Easy Listener receiver that combine to make a desktop sound field system. The speaker wears a transmitter and uses a microphone; the signal is picked up by the desktop unit and amplified through the speaker. This system is meant for use in small groups or by students in a classroom.

Inventory code: HH-PFM300-P; Cost: \$850; Phonic Ear, Inc., 800-227-0735, [www.phonicear.com](http://www.phonicear.com).

### Falck Voice Amplifier, Model 1001

The Falck 1001 is a voice amplifier for individuals whose voice is too quiet to be heard by others. The base of the amplifier weighs about 4 oz. and can be worn around the neck on an adjustable necklace or it can be placed in the user's shirt pocket. This device is powered by rechargeable batteries which can run up to 12 hours.

Inventory code: HH-VAMP1001; Cost: \$900; Saltillo Corporation, 800-382-8622, [www.saltillo.com](http://www.saltillo.com).



### EchoVoice EV4 Voice Amplifier

The EchoVoice is a compact speech enhancement system that is sensitive enough to amplify and clarify a very faint voice. There is a headset microphone, and also a transdermal (throat) microphone that is worn around the neck at collar level. Use of the throat microphone gives the option of freedom of movement without having to wear a headset, and allows EchoVoice to be used in situations where an oxygen mask is in use and the mouth may be covered. The microphone is attached to an amplifier that is worn at the waist, clipped to a pocket, or around the neck (using a lanyard). Active Tone Control maintains sound quality and also gives the ability to negate any feedback. The approximate operating time for this rechargeable unit is 8 hours.

Inventory code: HH-ECHO; Cost: \$379; Saltillo Corporation, 800-382-8622, [www.saltillo.com](http://www.saltillo.com).



### ChatterVox Portable Voice Amplification

Designed to raise vocal output of people with temporary or permanent voice impairments up to 15 dB, the ChatterVox brings a weak or low speaking voice to a normal level without straining the speaker's voice. The speaker wears a headset equipped with a microphone which projects their voice through the amplifier that is worn on the waist. This device uses a rechargeable battery that operates for up to 14 hours of continuous use.

Inventory code: HH-CHATVOX; Cost: \$225; Centrum Sound Systems, 408-736-6500, [www.centrumssound.com](http://www.centrumssound.com).



Children with hearing, speech, or learning disabilities may benefit from the devices featured in this issue. If a child needs such a device in order to participate in school and achieve educational goals, the school district may be responsible for providing the device. The need must be determined by the Individualized Education Plan (IEP) team and be included in the written plan.

Adults who may benefit from these devices and need funding for themselves or family members should check to see if they are covered by their health insurance plan. The device will need to be prescribed by an appropriate medical or allied health professional, and be “medically necessary”. If they are not covered, contact your ATRC for help in locating other sources of funding.

## PENNSYLVANIA'S ASSISTIVE TECHNOLOGY LENDING LIBRARY

Call toll-free:

877-PA AT LEND (VOICE/TTY)

EMAIL: [atlend@temple.edu](mailto:atlend@temple.edu)

WEB: <http://disabilities.temple.edu/atlend>

EDITOR: Sandra McNally

EMAIL: [smcnally@temple.edu](mailto:smcnally@temple.edu)

TEL. 215-204-3370

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available in alternate formats, by request



## Related Websites

[www.hearingloss.org](http://www.hearingloss.org) - This is the website for the Hearing Loss Association of America, a good place to start for information about hearing loss. For information about PA support groups, go to [www.pa-shhh.org](http://www.pa-shhh.org).

[www.hearinglossweb.com/Technology/ALDs/alds.htm](http://www.hearinglossweb.com/Technology/ALDs/alds.htm) - Hearing Loss Web has information on many 0topics related to hearing loss. This page has information on all types of assistive listening devices.

[www.listen-up.org/edu/assist.htm](http://www.listen-up.org/edu/assist.htm) - Listen-Up Web is a privately-hosted site designed to “make this web site your one stop place for information, answers, help, ideas, resources, and anything else related to hearing-impairment.” This particular page contains links about assistive technology.

## GLOSSARY – Types of ALDs

### *Personal Amplification Systems*

Personal listening systems pick up sound through a microphone, amplify the sound and direct the sound to user's ears through earbuds, headphones, or a neckloop for listeners with t-coils in their hearing aids.

### *FM Listening Systems*

FM systems use a specific radio frequency to carry sound from the transmitter to the receiver. These portable systems give the user and the speaker complete mobility and are a good choice for classrooms and meetings.

### *Infrared Listening Systems*

Infrared systems use invisible infrared light waves to carry sound from the transmitter to the receiver. Infrared is often used in theaters, courtrooms, and meetings where privacy is needed.

### *Loop Listening Systems*

Loop systems use a wire antenna “loop” that surrounds a room. A transmitter circulates a signal through the loop wire creating a magnetic field. Hearing aid users switch the setting on their aids to t-coil to pick up the signal when they are inside the “looped” area.

### *Soundfield Amplification Systems*

Soundfield systems consist of a microphone/FM transmitter, amplifier, and one or more loudspeakers. These systems amplify and broadcast the speaker's voice through loudspeakers that are on a floor stand or mounted to the wall or ceiling.