

# BUYER'S **guide**

The idea that good classroom lighting is essential to successful teaching is so obvious that it is taken for granted. Less obvious, but equally necessary, are good classroom acoustics. Although they have long been used to assist students with hearing impairment, audio enhancement, or “soundfield,” systems are being recognized as an important technology for any classroom with less than perfect acoustic quality.

Classroom audio enhancement technologies perform two functions. Using a wireless microphone, they amplify the teacher’s voice above other ambient sounds in the room (such as machinery, HVAC systems, and other students and classrooms), and distribute that voice evenly throughout the room to a speaker system, ensuring that every student can hear and understand the teacher adequately.




Audio enhancement systems use either radio frequency (RF) or infrared (IR) signals to transmit the teacher or student voice from the microphone to the receiving unit. Radio-based systems offer a clear signal regardless of the teacher’s location in the classroom, but are susceptible to interference from other radio and television signals or electronic devices. Infrared systems are immune to such interference, but require an unobstructed line of sight between the microphone and receiver.

Another issue to consider is whether to invest in a portable

system or one mounted in the classroom itself. Portable soundfield systems are less expensive and can be moved from class to class, but are less powerful than installed systems. Other considerations include microphone styles (lapel, collar, pendant, headset, handheld) and features (mute button, comfort, sound quality when turning your head) as well as the number of mikes that can be used simultaneously, the number and placement of speakers, and whether the system allows users to input audio from a computer, DVD player, or other non-vocal sources.

Studies such as one conducted in March 2007 by the Miami-Dade County Public Schools (<http://drs.dade-schools.net/InfoCapsules/IC0607.pdf>) point out that students in audio-enhanced classrooms display increased on-task behavior, improved academic achievement, and decreased disciplinary issues. Soundfield systems also benefit teachers through reduced vocal strain and absenteeism and increased freedom of movement within the classroom.

Each of the companies listed offers several different systems; this guide is just a sampling of systems available. Potential buyers should conduct extensive research before purchasing an audio enhancement system. In many cases, the price varies depending on how many units the school or district purchases.

Audio Enhancement	
	Model
<p><b>Hamilton Electronics</b> <a href="http://www.hamiltonelectronics.com">http://www.hamiltonelectronics.com</a></p> 	Sound Enhance 2
<p><b>Califone</b> <a href="http://www.califone.com">http://www.califone.com</a></p> 	PI30-IRSYS
<p><b>Custom All Hear</b> <a href="http://www.customallhear.com">http://www.customallhear.com</a></p> 	CAS-1000-302
<p><b>LightSpeed Technologies</b> <a href="http://www.lightspeed-tek.com">http://www.lightspeed-tek.com</a></p> 	REDCAT
<p><b>Audio Enhancement</b> <a href="http://www.audioenhancement.com">http://www.audioenhancement.com</a></p> 	Achiever
<p><b>FrontRow by Phonic Ear</b> <a href="http://www.gofrontrow.com">http://www.gofrontrow.com</a></p> 	Pro Digital

## Systems

Price	Portable or Fixed	IR or RF	Speaker Type/ Number	Microphone Style/Features	Auxiliary Inputs/ outputs	Battery Life	Notes
\$549	Portable	RF	2 wireless speakers with independent volume control	Lapel	No/no	12 hours per overnight charge	Additional speakers available at \$69 each
\$950	Fixed	IR	2 array speakers	Headset with aux input Optional second microphone (cannot be used at same time as teacher mic)	Yes/yes	Uses rechargeable AA	Lockable storage case Six-year warranty
\$995	Fixed	RF	5 speakers in single ceiling-mounted pyramid cluster	Lapel Optional second microphone	No/no	Uses rechargeable 9-volt	Five-year warranty
\$995	Wall mount or tabletop	IR	Single receiver/speaker unit with 8-band equalizer	Pendant/handheld with mute and aux input Optional second microphone	Yes/yes	8 hours per overnight charge	Five-year warranty
\$1,299	Fixed	IR	4 ceiling-mounted speakers	Pendant with remote volume control Handheld for student use	Yes/yes	7 hours on 4-hour charge	Two-year warranty
\$1,560	Fixed	IR	4 ceiling-mounted	Pendant with mute and aux input Optional second microphone	Yes/yes	8 hours per overnight charge	Features digital feedback suppression