

Selecting the Right System

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Classroom Amplification Technology or CAT is now a standard in many school districts around the country. As the leader in CAT, LightSPEED is able to offer several system and speaker options that optimize the learning environment. This white paper compares various LightSPEED systems to help you better understand features, options and applications.

*Acoustic challenges
are different for every
room. That's why it's
important to have
options.*

“It is difficult to ignore the argument that if children have difficulty listening to the teacher because of poor classroom acoustics, they are less likely to meet educational targets.”
—McSporran, 1997

Optimizing the Learning Environment

At first glance, classrooms can appear pretty much the same wherever you go. However, classroom acoustics, defined as “the total effect of sound within a closed space,” can vary greatly. Poor acoustics coupled with sounds from outside and within the classroom create a distracting and difficult listening/learning environment. Noisy classrooms impact how well students can hear the instruction, directly affecting academic performance. This is where a classroom amplification system can make all the difference.

LightSPEED Technologies has always designed classroom amplification systems to optimize learning environments. These systems range from a simple plug & play unit, to a fully installed, multiple speaker system, integrating all other audio sources. Every classroom has its acoustic challenges, but with the various system and speaker combinations offered by LightSPEED, audio solutions are readily available.

There are three basic categories to consider when determining the type of system best suited for your classroom. They are differentiated by how many audio sources will run through the system, what features are required and whether the system is a permanent installation. It’s also important to consider what type of instructional technologies you plan on introducing within the next 5–10 years, as this will impact your decision.

Multimedia & Technology Integrated Classrooms

Multi-media & technology integrated classrooms are set up with various instructional technologies and presentation tools including electronic white boards, school or district servers for on-demand audio/visual downloads, computers, LCD projectors, CD and DVD players, document cameras, etc. These “intelligent” classrooms require installed amplification systems that allow all audio sources to run through it, thus providing even sound distribution throughout the entire learning environment. The need for three or more audio sources, beyond the microphone use, would be considered a multimedia classroom. LightSPEED systems meeting these requirements include:



880iR Classroom Amplification System

“All students benefit from being able to hear the speaker. The promise that technology brings in overcoming the acoustical barriers to speech recognition and sound perception is not only exciting; it has been proven.” —Debbie Tschirgi, Director of Educational Technology Programs at ESD #112, Vancouver, Washington



REDCAT™

880iR: This system is designed with advanced features that adapt to today’s changing classroom environment and allows for future multimedia expansion. The 880iR accepts up to **four (4) additional audio sources**.

Advanced features include:

PageFirst Technology - All school wide PA announcements automatically mute the classroom amplification system.

Teacher Voice Priority - A teacher’s mic can over-ride auxiliary audio sources including the student’s microphone.

Speaker Zoning from the front panel - The teacher has the ability to turn on/off specific speakers in the room to create listening zones.

850iR: This system provides the same technology and performance as the 880iR. It accepts up to **three (3) auxiliary audio sources** and incorporates the PageFirst feature. It’s designed for a straight-orward installation and ease of operation.

Standard or Basic Classrooms

A standard or basic classroom, may be characterized as a room needing to amplify the teacher’s and/or student’s voice, and secondly to provide one or two auxiliary audio inputs. LightSPEED systems meeting these requirements include:

820iR: This system accepts up to two **(2) auxiliary audio sources**. Its compact size and basic features meet a large majority of classroom requirements. This is an installed system with multiple speaker options to provide optimum sound quality in a wide variety of classroom environments.

REDCAT™: This system offers **one (1) auxiliary audio input** and utilizes a “built-in” flat panel speaker for even sound distribution. This all-in-one design requires no installation. It offers the same superior infrared and audio technology as the other LightSPEED systems, and can be set up and operational in less then 5 minutes.



Portable systems offer a quick and easy way to amplify a teacher's voice.

Portable Systems

Portable classroom amplification systems are designed to provide the greatest flexibility when required to move a system from room to room. Although these systems do not have the same sound distribution capabilities as installed systems, and have limited auxiliary audio inputs, they do offer a quick and easy way to amplify the teacher's voice. LightSPEED's 705iR meets the criteria.

705iR: Designed for classrooms of under 1,000 square feet or small group meetings. This compact, portable system is lightweight, battery or AC operated and sets up in minutes. It has **one (1) auxiliary audio input** and comes with a padded carrying case.

All LightSPEED classroom amplification systems include:

- Receiver/Amplifier
- Speaker(s)
- Infrared sensor
- LightMic™ transmitter(s)
- Audio output(s) for assistive listening devices
- Auxiliary audio input(s)
- Cables and connectors required for installation
- Five-year warranty

The matrix below is an application guide and quick reference to the basic feature sets available with LightSPEED Classroom Amplification Systems. A local LightSPEED representative is available to help determine what systems would be best suited for specific classrooms.

	Product Features	Select Product				
	Features	880iR	850iR	820iR	REDCAT™	705iR
Multimedia & Technology Integration	Audio inputs for integration	4	3			
	Rack-mountable Amplifier	●	●			
	PageFirst™	●	●			
	Teacher Voice Priority	●				
	Speaker Zoning on Front Panel	●				
Basic Classrooms	Audio inputs for integration			2	1	
	Basic Features			●	●	
	Value Priced			●	●	
	Simple Installation			●		
	No Installation Required				●	
Small Area Portable	Integrated Speaker, Amplifier, Receiver, Sensor				●	●
	No Installation					●
	Battery and AC Powered					●
	Carry Case					●

Choosing a speaker that produces highly intelligible sound to every corner of the room is important. LightSPEED offers a variety of ceiling and wall mounted speakers that have been designed specifically for the classroom.

Ceiling Speakers:



CNXQ

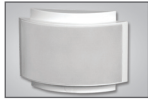


DRQ

Wall Speakers:



WMQ



CSQ



NXQ

Portable Systems

Debbie Tschirgi, Director of Educational Technology Programs at ESD #112 in Vancouver, Washington, has compiled the following list of questions to ask manufacturer's representatives when considering the purchase of classroom amplification technology.

- Is the solution an Infrared (IR) or Radio Frequency (RF) system?
- How does it address the masking of the weaker, higher frequency sounds, such as consonant sounds?
- What kind of elements interfere with the system? (Sunlight, other classrooms close-by that are using the same solution, etc.)
- What are the microphone options? (lapel, pendent, headset, handheld) How many microphones can be used simultaneously?
- What are the microphone features? (comfort, sound quality, charging mechanism, auxiliary audio input)
- How scalable or expandable is your product? In other words, what are some other ways that it can be used to amplify other signals in the room, such as VCR's, computers, televisions, personal FM systems, etc.
- What are the speaker options? (single speaker, flat panel speaker, ceiling or wall mounted speakers, etc.)
- Considering the size and shape of the classrooms, are distributed speakers needed, or are they overkill?
- What is the average life of batteries used in the microphone? What other considerations should be made about batteries?
- What is the warranty? And what does it cover?

The above questions could be turned into criteria that you use to compare each system you investigate. Debbie Tschirgi's in-depth white paper entitled: Classroom Amplification Systems: Understanding and Overcoming the Acoustical Barriers to Learning, can be downloaded at lightspeed-tek.com/whitepapers.aspx

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Local LightSPEED Classroom Amplification Consultants are available to tour your school and help determine what systems are appropriate for optimizing the learning environment. LightSPEED representatives are also available to speak at parent teacher meetings, school board meetings or other venues where information about this simple, yet powerful technology is requested.

LightSPEED offers several types of system and speaker combinations to meet the various classroom configurations and acoustic challenges.



High Value Solution: 820iR

The 820iR delivers the essential features for schools that want a simple, high value classroom amplification system.



Interface with Multimedia: 880iR

This system is designed with advanced features that adopt to today's changing classroom and allows for future multimedia expansion.



REDCAT™ Infrared Classroom Amplification Technology

The REDCAT is an all-in-one system that requires no installation. It can be mounted on the wall like a picture frame, or placed on a bookshelf or desktop. It distributes sound evenly throughout the classroom and is specifically engineered to deliver outstanding voice intelligibility.

Questions?

If you have any questions about Classroom Amplification Technology, or would like to speak with a customer service representative regarding specific classroom applications, please call LightSPEED Technologies at 800.732.8999.

About LightSPEED

Established in 1990, LightSPEED is the leader in Classroom Amplification Technology. We are passionate about improving the listening and learning environment for every child. Built with the teacher in mind and designed specifically for the classroom, our systems are easy to use and proven to increase overall student achievement—without changing curriculum.

LightSPEED Advantages

LightSPEED classroom amplification systems are designed for classrooms of today and tomorrow...

- Commitment to Student Achievement
- Professional Audio Quality
- Virtually Unbreakable LightMic™
- 5-year Warranty
- No Audio Drop-out, Guaranteed
- Personal Service and Support

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