

## Digital Paging Technology in Schools

*A digital paging system can lift restrictions of a traditional analog paging system while adding features that aren't possible with older technology*

By Scott R. Jordan

For K-12 schools, a school-wide paging system is required for announcements and emergencies. Like many technologies, school paging systems should be designed and selected with longevity and future expansion in mind. A digital paging system can lift many of the restrictions of a traditional analog paging system while adding features that weren't possible with older technology. Here are some points of comparison between the two platforms ...

### Equipment

With most paging systems, there's usually one dedicated piece of equipment per function. For instance, an audio mixer is required to control all input sources, an amplifier would power the distributed loudspeakers, and a timer would be used for scheduled/timed messages. A central equipment rack and designated space for the rack would be required. Future expansion of the system would add equipment, assuming there's enough space.

Digital paging systems, on the other hand, will usually have more features available per device, resulting in a system that has equal or greater capabilities than its analog counterpart. Digital paging systems require less space in an equipment rack. A single piece of equipment with multiple functions also eliminates the cables that would otherwise connect several components. Because less space is needed, a smaller equipment rack could be used to house the gear. Another advantage is that equipment within a digital system doesn't need to be centrally located.

### Location and Cabling

With a traditional analog system, cabling stems from the main equipment rack. All loudspeakers wire to this central location. If the system requires expansion, additional cable must be pulled, which adds costs for materials and labor for the client.

In many digital systems, interconnect between equipment is accomplished with CAT-5 or fiber-optic cable, which reduces costs and allows equipment to be spread throughout the network. This is an important feature for a school campus that is spread over multiple physical locations because equipment can be locally located.

### Integration with Technology

Most paging systems integrate with a phone system, mainly for the purpose of being able to call in with an audio page through the system; however, options and audio quality can be limited.

A digital paging system allows pages to be heard and/or seen (over displays) in any combination of zones. Messages can be pre-recorded and played back during emergencies, or can simply be automated and played back at given times. Emergency pages can be called in and activated, with notifications sent automatically via e-mails. Integration with a computer software system is standard and offers customization of the system for a school's specific needs.

### System Control and Energy Management

Many analog systems are manually adjusted. Remote control is done through hard-wired wall panels. Certain inputs to the system can be prioritized over others, though there are limits, and making changes requires access to the front and rear of the equipment. Computer control may or may not be an option, and fault monitoring isn't always an option.





With the central control on a LAN/WAN network, your client can access the digital system remotely, making troubleshooting and changes simpler. The software control allows for monitoring of all parts of the system, and can issue notification via an alert or e-mail if there is a failure with any part of the system.

Additionally, integration with security cameras, electronic door locks, lighting control, and thermostat systems is possible. As long as these features are on the school's network, the control software can monitor and control them as one system.

### **Costs**

Initial costs for an analog system are lower by comparison. Costs can rise when adding cable and/or conduit, and expanding the system with additional equipment. An expansion that requires a near replacement of the existing system is especially costly in materials and labor.

With the digital platform, your client buys a complete system, where all the parts and pieces are engineered to work together. Because these digital systems typically use a common, single type of cable for interconnection, less infrastructure is needed than that of a comparable analog system. This translates to lower material and labor costs.

By understanding the long-term goals of a paging system, many schools are opting to go digital. Digital devices run more efficiently, use less energy, and offer more options not possible with analog systems. Help your clients choose a paging system that will accommodate possible changes in the future; in the long run, this will prove to be the more cost-effective solution.

*Scott R. Jordan is a consultant in the systems design group at Acentech Inc., a multi-disciplinary acoustics, audiovisual systems design, and vibration consulting firm based in Cambridge, MA.*