

MoreVoice vs. Existing Classroom Reinforcement Audio Solutions

There are presently two mainstream wireless sound reinforcement technologies on the market that are used in teaching environments. Let's look at how the new MoreVoice digital infrared technology compares to others.

The first technology is wireless sound reinforcement based on radio frequency technology. It includes UHF, VHF, 2.4G and Bluetooth, etc. With this technology, RF signals can be transmitted through walls and with long distances, but with no directivity of the transmission. Therefore, although this type of wireless solution allows the teacher to move freely, recognizing a larger display space, it is very complicated and difficult to control the RF signal when multiple systems work at the same time. Mutual interference crosstalk often occurs, and it is also susceptible to interference from unknown sources (such as wireless routers, mobile phones, Bluetooth devices, wireless walkie-talkies, wireless mice/keyboards, central control wireless touch screens, etc.). The instability of Bluetooth or 2.4G devices is particularly prominent in a school environment where multiple microphones are used at the same time on a large scale, and the chances of using microphones in close-range classrooms are greatly increased. DECT RF technology offers some improvement over standard RF in interference rejection, but classroom solutions based on this technology often suffer from far less than CD-quality transmission. They are also subject to future FCC regulation changes. In addition to interference, repeated, cumbersome pairing is required when moving to different classrooms, and some studies suggest long-term use will have the risk of radio frequency radiation hazard. The quality of radio-frequency wireless amplifying equipment is uneven, and the hazards of radio frequency radiation can be large or small. However, if you use infrared wireless amplifying equipment, you do not need to worry about these constraints at all.

The second technology is a wireless sound reinforcement solution using infrared transmission technology, which is further subdivided into two technical solutions: analog infrared transmission technology and digital infrared transmission technology.

The older of these solutions, analog infrared transmission technology, has the advantages of anti-radio interference: 1. There is no need for pairing and 2. It can move from classroom to classroom easily. However, in practical applications, analog infrared has challenges related to the user's body position and direction of activity as analog

infrared is subject to signal drop and interference when the user turns around and their back is facing the signal receiver. Under the analog infrared transmission technology, the increase of the distance between the wireless microphone and the signal receiver will gradually introduce noise and reduce the signal-to-noise ratio (similar to when a car radio experiences interference when entering a tunnel). Even if the signal is transmitted normally, the sound quality can suffer. Analog infrared technology cannot be used normally under direct sunlight or in an environment with more high-frequency, energy-saving lighting, which is common in commercial buildings. Essentially, analog infrared transmission struggles with mitigating interference, which can cause listener fatigue and subpar transmission in general due to drop out and noise.

The newer, digital infrared transmission technology has all the advantages of analog infrared transmission: 1. It is not interfered with by radio frequencies and can fully avoid unknown sources of interference; 2. When the microphone is used in different classrooms, there is no need for cumbersome pairing making it ready to use immediately; 3. It provides instant privacy when exiting a classroom; and 4. The microphone has no radio frequency radiation, so the teacher does not need to worry about any effects of radio frequencies to the body. However, digital infrared soars beyond analog infrared in that it also addresses all of the shortcomings of analog infrared. Due to its digital transmission, it elevates audio quality to restore the natural voice of the speaker to that of broadcast-quality sound.

MoreVoice patented digital infrared transmission technology has many unique advantages: 1. The sound quality is high-fidelity, with the signal-to-noise ratio of all channels as high as 85dBA and the distortion less than 0.06%, reaching professional broadcast-level sound quality; 2. In the classroom, professional-grade sound quality is guaranteed, with no problem of sound quality attenuation due to the increase in transmission distance in rooms up to 1500ft² (XL rooms simply need one additional ceiling receiver); 3. It has vastly superior anti-interference ability and can work normally in direct sunlight, rejecting high-frequency interference from light sources.

MoreVoice digital infrared delivers professional, acoustic parameters unrivaled by older classroom audio systems which rely on DECT or analog infrared in many areas:

1. Frequency response range *The frequency response bandwidth that our human ears can perceive is 20~20kHz. Above 16kHz is called CD-level sound quality. Digital infrared technology can achieve 50~20kHz sound. This bandwidth allows for virtually flawless expression of the human voice or music.*

2. Signal-to-noise ratio *The larger the value, the better the sound quality. After the audio system reaches 80dB, it will increase by 1dB every time. Older classroom audio transmission technologies cannot (or rarely) achieve this. Digital*

infrared transmission technology can reach more than 85dBA; The distortion rate is controlled below 0.06% allowing for near perfect sound. The visible distance of digital infrared transmission is more than 80 feet and, at any position within the effective range, the sound can reach CD-level sound quality. Any position or orientation inside this range will not affect signal transmission and sound quality.

Looking at the solutions compared above, MoreVoice offers world class performance in every category: It offers professional, studio-quality audio across the entire system, from wireless microphone to speakers. It rejects virtually any interference source for crystal clear voice and music quality. It doesn't interfere with any RF devices, which are common in both education and corporate settings. It offers instant, automatic, no-touch privacy when exiting the room. It alleviates concerns over any effects of radio frequencies to the body. It simply delivers the next evolution of sound reinforcement to any professional environment.

Contact us today for more information or to schedule a demo.