Panasonic

Stephen M. Ross School of Business at Univ. of MI Case Study Write Up:

The Stephen M. Ross School of Business at University of Michigan Gives Classrooms a Sound Upgrade with Panasonic's Digital Wireless Microphone System

Redesign Offers Flexibility to Accommodate Hybrid Virtual or 100% Virtual Learning Experiences

University of Michigan's Stephen M. Ross School of Business is a top ranked business school worldwide, offering action-based learning to prepare graduates for an ever-evolving world. To do this, "Michigan Ross" aims to set a new standard in business and business education. Every year, the school has approximately 4,200 students who rigorously pursue their Master's in Business Administration.

Christopher Visel, Director of A/V Infrastructure for the University of Michigan Ross School of Business was already looking to upgrade the wireless microphones in their classrooms before the COVID-19 Pandemic. "Our microphone system was about 10 years old and the RF Spectrum it operated on was phased out by the FCC, so it was time for an upgrade. I was looking for a wireless mic solution that used a frequency spectrum that would be a better long-term solution. Our classrooms, particularly in our Ross Building, are adjacent to each other and on top of each other. Because the building is several stories, we were concerned about cross talk and interference, which was a problem with our old system. It also had to be easy for faculty to use and for our IT department to support. After testing Panasonic's Digital Wireless Microphone system at our facility for several months, it was clear the Panasonic system was the right choice."

Paul Eiswerth, Vice President for TEL Systems, the commercial integration company that was selected to do the installation, said, "Panasonic's Digital Wireless Microphone System uses DECT 1.9GHz technology to ensure a stable and secure communication from each wireless microphone to the receiver. This is important particularly since each classroom is adjacent to one another and there are multiple floors of classrooms at Ross, so we didn't want to have any cross talk. The system features a distributed architecture allowing us to rackmount the receivers in locked cabinets outside of the classroom. This leaves just the wireless microphones, wireless bodypacks, and the antennas inside the room. It is incredibly easy to install and the wireless microphones are pair-registered to the Panasonic receivers, so there is no need to manually channel plan and assign."

Visel said, "Our professors like to use the wireless bodypacks and lavalier microphones because it keeps their hands free to use the computer, whiteboards and document cameras. Panasonic's wireless bodypacks are among the lightest in the industry (less than ¼ lb. with the battery inserted), so they liked that when we tested Panasonic vs. other competitive offerings." Each Panasonic wireless handheld microphone or wireless bodypack takes only one AA battery (standard or rechargeable Ni-MH). Desktop charging consoles are in each room to recharge the handheld mics and wireless bodypacks when not in use.

"Another feature of Panasonic's digital wireless microphone system is that both the wireless microphone and wireless bodypack feature a 3.5mm audio input. Professors and students that are using the classroom and want to play audio from their laptop or smartphone can easily do so by plugging a 3.5mm cable from their device into the handheld or bodypack," Visel explained.

"Since we were not quite sure what would happen with Fall semester due to COVID-19, it was important to redesign the classrooms so that they could support a variety of educational options. From 100% in-person to hybrid in-person/virtual to 100% virtual instruction, we can be very flexible in providing faculty and students with the best learning environment," added Visel. "We had to design a system that would meet the specific challenges of pretty much any scenario. We were also constrained on budget and Panasonic's Digital Wireless Microphone System met our budgetary needs. We already had in-ceiling speakers and WolfVision document cameras."

Ross was also able to leverage previously owned 80-inch displays from collaboration classrooms and distribute them to each classroom where they are installed onto a custom fabricated stand for displaying a "Zoom gallery." Lecture desks are motorized for adjustable height and have Crestron touch panels that serve as room control as well as double as confidence monitors. The rooms have occupancy sensors that automatically wake up the Crestron touch panel and turns on the lights when the professor walks in the room. Professors can control the volume levels on the Panasonic microphones from the Crestron touch panel and can see the audio level as well as the battery level status. Professors can choose to bring their own laptop for presentation or insert a USB thumb drive into the computer locked in the desk. University of Michigan has standardized on Zoom for online education.

Another challenge the Michigan Ross IT team had to overcome with a hybrid in-person / virtual class was how to facilitate natural dialog between students and the teacher. To accomplish this, Visel mounted three ceiling microphones, later adding a fourth to capture speech near teachers desk, and one microphone over the teacher's desk in the room and ran them into a Biamp Tesira Digital Signal Processor (DSP), as well as a line out from the Panasonic digital wireless microphone system. This put priority on the Panasonic lavalier microphone so that the teacher could always be heard. The Panasonic receivers are wired directly to the Tesira DSP, and the line out is from Tesira to PC.

Phase 1 deployment of the Panasonic wireless mic system includes 22 classrooms in the Ross, Wyly, and Blau buildings at the University of Michigan Ross School of Business. Two classrooms in the Blau and Ross building have room dividers that have been eliminated due to social distancing requirements. The University wanted to accommodate a future when they could be divided, so multiple wireless receivers and antennas were installed to accommodate one large room or two smaller ones.

"This was a fun project to work on," said TEL Systems' Eiswerth, "mainly because Panasonic worked as a team with us and the IT team at Michigan Ross School of Business. Sometimes projects like this when the manufacturer is heavily involved can get a little antagonistic, but Panasonic delighted us with their superior service and support."

"We're very happy with the audio quality of the Panasonic digital wireless mic system," said Visel. "With our new classroom designs, we are well-prepared for whatever comes our way."

Contacts

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Gear in Each Classroom

Audio:

- Panasonic Digital Wireless Microphone System:
  - 2 WX-ST400 Wireless Bodypack with Lavalier Microphone (headset mics also available)
  - 1 or more* WX-ST200 Wireless Handheld Microphone
  - 2 or more* WX-SA250 Antennas
  - 2 WX-SR202 2-channel Wireless receivers (rack mounted in cabinet outside classroom; allows two more Panasonic wireless mics or bodypacks to be added
  - 1 WX-SZ200 Desktop Charging Console

    *depending on size of room
- 1 Biamp Tesira Digital Signal Processor (rack mounted in cabinet outside classroom)
- 1 Multichannel amplifier

- In-Ceiling Speakers

Video:

- 1 Crestron Touch Panel / Display
- 3 projectors
- Web camera
- WolfVision document cameras

Sources:

- 2 Computers

Control / Automation:

- 1 Crestron Touch Panel / Display
- 1 Crestron Processor
- 1 Room Occupation Sensor
- 80-inch confidence monitor