

Salus University: Infrared for Cutting Edge Exam Rooms

At the start of the 2015 academic year, Salus University announced a new Master of Science degree program in Speech-Language Pathology (SLP). SLP professionals are educated and trained to assess, diagnose and treat communication and swallowing disorders. The announcement of this new Master of Science degree program became the impetus to completely remodel their speech and diagnostic area. The project included 10 dynamic exam rooms with camera feeds to a central control room to monitor, record for capture, stream, and archive. A second, offsite location for their International Module is a replica of the campus diagnostic area with the addition of two-way communication.

"We needed to come up with a way for an instructor to remotely and discreetly communicate with students performing patient interviews," stated Warren Osse, Senior Design Engineer for Vistacom, Inc. "A wireless solution was an obvious choice, although we could not use traditional wireless technology due to the proximity of the exam rooms to one another and HIPAA privacy regulations."

Vistacom worked with Lienau AV Associates, Inc. to design a system that placed two infrared emitters, instead of wireless devices, in each exam room. The student conducting the interview in the exam room wears a body pack infrared receiver connected to a small earbud. When the instructor needs to communicate with the student from the control room, they simply select the desired exam room using a touch panel. The touch panel routes the instructor's signal via an audio digital signal processor to the infrared emitters in the selected exam room, and that signal is received by the body-pack worn by the student. In addition to these privacy challenges, the design had to insure the transmission would be received regardless of where or how the body pack was worn. There are dual infrared emitters in each room. These are fed by the instructor's microphone, controlled via an audio digital signal processor and a touch panel at the instructor's control room. This invisible light signal is processed by the student's unobtrusive belt pack receiver and connected to an earbud the student wears, like a cell phone earbud. This allows dialog from the instructor to the student, without the patient being aware or interfering with the interview. Due to the nature of the infrared light, this allows for private, HIPAA compliant communication that will not pass



outside each interview room, regardless of proximity. "The system is really cutting edge," added Osse. "It has very effectively increased the level of interaction between students and teachers."



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