

Z-Band, Helping Patients Have the Comforts of Home with High-Definition TV

Challenge

When **University Health System** (UHS) Officials began planning to build their Sky Tower, a million-square-foot hospital that would more than double the number of patient rooms, they were determined to create an environment that would help reduce patient stress by incorporating some of the comforts of home. As a result, the Sky Tower, which opened in April 2014, features green spaces, art, and comfortable private patient rooms where a patient can watch high definition television with their family.

“Every decision we’ve made has had the patient in mind, and at the heart of that are our patient rooms,” says Mark Webb, Senior Vice President of University Health System.

University Health knew from the beginning that extending the hospital’s existing TV distribution system into the new tower was not a viable option. “It’s an older coaxial system. To add to it, you tap in wherever you can and then amplify and distribute to the TVs on that floor. It is a tap-and-go approach,” says Chris Arellano of Walker Engineering, Inc. in Austin, Texas, which provided network installation services for the tower, “and any addition or removal of a TV on the old system requires system rebalancing – maintenance is disruptive and expensive!”

Solution

The DataCom Design Group, LLC of Austin, Texas, was selected to work with the architects to develop the specifications for certain aspects of the project so that it could be put out for bid.



University Health System, San Antonio, Texas, April 2014

“This was my first experience working with Z-Band, and it was the simplest television distribution system I ever installed. I wish all installations could go so smoothly!”

Chris Arellano
Walker Engineering, Austin, Texas

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Early in the planning process, Andre Schmucker, a DataCom Senior Designer, recommended that the hospital use a video distribution system from Z-Band Technologies.

“We had a couple of other hospitals in Houston that used Z-Band, and they were impressed with features such as Z-Band’s automatic signal gain and tilt control,” Schmucker says.

However, some members of the University Health planning team were initially concerned. They had seen or heard negative things about other video systems that relied on twisted-pair cable for distribution. Those systems were passive and required manual balancing, similar in some ways to the old coax system. Schmucker was familiar with Z-Band technology from prior installations and held a meeting to demonstrate Z-Band’s active signal conditioning capability. The planning team quickly realized the long-term maintenance savings and enhanced patient viewing experience that Z-Band’s system could achieve.

The Z-Band system uses the same twisted-pair cable used for a patient engagement portal, whereas a coaxial system has to run coax and twisted-pair cable side by side to every patient room. Patients can use the patient portal to watch videos about their condition and treatment or to request services such as housekeeping.

The Z-Band system and the patient portal each use different pins on the same twisted-pair cable. “Z-Band uses pins 7 and 8 for video, while the patient engagement software uses pins 1,2,3, and 6,” says Henry Collins, Senior Engineer at Z-Band.

In addition, use of twisted-pair cable gives the hospital more flexibility over how it uses its floor space in the future. “CAT 6A (twisted-pair) cable can be used for security cameras, wireless access points, and network connections as opposed to being limited to TV distribution,” says Arellano.

University Health found Z-Band to be the best fit for both the present and the future.

As Arellano points out, “When a building will last 50 or more years, you want as much future proofing as possible.”

Design & Installation

DataCom Design completed the final design and specifications, and when the Sky Tower was ready for cabling, Walker Engineering was brought in to install the Z-Band system.

First, the Walker Engineering team set up a new TV headend for a clean digital signal feed into a Z-Band GEN 4 “GigaBUD” video hub with a built-in single-mode fiber optics receiver. Using a fiber splitter, the signal was then distributed to the two wings of the tower.

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The fiber carries the video to the GigaBUDs set up as master video hubs located on the first floor of patient rooms in each wing. From there, the video is carried vertically using a coaxial cable backbone to a GigaBUD set up as a satellite hub on each floor. The video is then distributed horizontally over twisted-pair cable to a GigaBOB (active balun) at each TV in every patient room.

Results

When the Walker Engineering team brought the patient engagement system online, Arellano momentarily panicked when he saw that the portal's USB tuner stick created interference with the Z-Band video distribution system. His nerves were quickly put at ease with one five-minute phone call to Henry Collins at Z-Band (who was on vacation at a beach).

"Honestly, Collins told me how to correct the situation in one minute, but I spent four more minutes asking questions because I couldn't believe it could be that easy," Arellano says, "I could have saved a lot of concern and time on this project if I had known how well the Z-Band technology worked. It seemed too good to be true, but it worked just like they said it would!"

"The Z-Band system is 95% plug-and-play," says Collins, "but easily accessed options are available to customize an installation when needed."

Of course, the patient rooms were not the only locations at the hospital where video was required. High-definition TV was also made

available in the 35 operating rooms, the lobby area, and at the guard gate of the parking garage.

The rest of the hospital will gradually upgrade to the new digital headend as each wing of the original hospital is renovated, and eventually the original analog headend will be retired.

Because of the success at the Sky Tower, University Health has selected the Z-Band system as its standard for new construction and renovations that involve TV distribution. As a result of the standard, the Z-Band system has also been installed at a new health center on another campus.

Patient satisfaction is paramount; it enhances healing and minimizes time spent in the hospital. Dependable, high-quality TV contributes to this wellness.

