

40% Efficiency at KERA, Texas

Transmitter Power



KERA is a not-for-profit public media organization that serves the people of North Texas. The station broadcasts to the fourth-largest population area in the United States. KERA produces original multimedia content carrying the best in national and international public television and radio shows. Edward Hedge is the Director of Engineering for KERA. Edward oversees the day-to-day operations of the Engineering Department which includes maintenance on all broadcast related equipment and also the design and implementation of broadcast related equipment throughout the entire station.

Like any public media company, every cent counts toward company projects. So, some people may have been surprised when Edward made the decision to go with a Rohde & Schwarz transmitter solution for both his television and radio broadcast needs. Edward spent a year analyzing the various solutions available from all the manufacturers and, when he sat down and did the math, it was soon clear that Rohde & Schwarz was not only the highest quality solution available, but over time was the best value thanks to its efficiency, ease of use and low maintenance requirements.

The station previously relied on ten full racks of equipment, eight of them filled with amplifiers and two with exciter equipment. From this "Frankenstein" (in Edward's words), his 30kW solution was able to get close to 27kW of power for channel 14. Being at the low end of the UHF spectrum, it needed a lot of filtering due to it being so close to the cell phone frequency band. Staying on air was also a problem. Replacing and then balancing transistors became an issue with one or two being blown per quarter, taking an engineer two to three hours to replace.



When Edward replaced his 'monster,' the Rohde & Schwarz solution was 60% smaller, with just four racks supplying 53kW of power at 40% efficient. It was a big step up from the original 15% efficiency they were working with. Edward would have been happy with the same power bill for nearly double the output power, but in fact the final bill was 32% less, making Edwards' EVP & CFO, Bill Leftwich, extremely happy with the first quarter of operational power bills being smaller than before when they were transmitting at just 30kW.



The story gets even better because when Edward replaced the television transmitter he also upgraded his FM transmitters with a Rohde & Schwarz solution. There were some added benefits for his team as the transmitters also shared the same rack, the same liquid cooling and the same user interface. Noticing the interchangeable parts and the same straight forward operation across all of the products, Edward explained, "It's a perfectly engineered German product. There is nothing about the transmitters I would change."

Rohde & Schwarz has a reputation for building the finest equipment in the world, but what attracted Edward to their solution was not only the great value for the money (thanks to the efficiency of their transmitters), but their stability as an organization, being over eighty years old and never having to take a loan against the company. Edward said, "It would have been a shaky decision at best to lean on any of the other companies. Visiting the Rohde & Schwarz transmitter factory in Tiesnach sealed the deal. Nothing is outsourced, everything is manufactured in house from top to bottom – they even make their own screws!"

When asked if all the claims of efficiency and reliability that Rohde & Schwarz make were true? "Yes, the other day I checked in on the FM transmitters and they were so efficient, the cooling fans were not even running," said Edward. "As a public station, we just don't have the money to perform expensive repairs and, so far, the THU9 and both FM transmitters have been 100% reliable, performing with even better efficiency than we were promised. I couldn't be happier!"

