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**Newcastle Casino Keeps Patrons Connected with Seamless Sound Thanks to RF Venue Antenna and Distribution Technology**

Huge casino venue posed complex geometry and distance challenges across multiple buildings, but the [Diversity Fin](https://hubs.ly/Q0160kl40) and [CX22](https://hubs.li/Q0160ktX0) antennas, [Optix Series 3](https://hubs.li/Q0160kQZ0) RF over fiber optic systems, [4 ZONE](https://hubs.li/Q0160kSZ0)active antenna combiners and a [DISTRO4](https://hubs.li/Q0160ldW0) antenna distribution amplifier from the toolkit of RF Venue products provided the perfect solutions

*Ashland, MA, USA*, *March 15, 2022* — Newcastle Casino is a 112,000-square-foot facility opened in Newcastle, Oklahoma, in 1998, offering 14 popular table games including blackjack, 3-card poker, ultimate Texas hold ‘em, and baccarat, as well as more than 3,000 electronic games, along with a restaurant and a sports bar. The venue sprawls across four large buildings connected by hallways; needless to say, patrons have plenty of space to enjoy themselves. Operating the facility at that scale did create a challenge for the casino’s marketing and promotions managers, who want to keep everyone apprised of ongoing promotions and contests, and announce winners as a way to keep patrons fully engaged. However, the wireless microphones employed for these applications were experiencing dropouts as a result of distances and uneven building geometries. Luckily, there was a solution: products from the toolkit of [RF Venue](https://hubs.li/Q011VLWW0). Integrator [AVL Systems Design](http://avl1.com/) (owned by Marc & Stacy Pierce) was called upon to design and install a new wireless antenna and signal distribution system for Newcastle Casino last year, and since then dropouts have been a thing of the past.

“Wireless microphones are a great way to keep patrons engaged and aware of all of the promotions the casino runs, but the size and the layout of the buildings were causing dropouts to the audio,” explains Steve Covey, Director of Bid Estimation & Project Management for AVL Systems Design. “They needed a way to assure that the audio would be seamless as someone walked a microphone from one end of the complex to the other, a distance of several thousand feet and with different ceiling heights in each building.”

RF Venue, though, had the answers. Covey started with advice and design input from Don Boomer, Senior Applications Engineer at RF Venue, who helped him choose the right mix of products for the project. For instance, in the casino’s North/Northeast Building, the high ceilings are well served by RF Venue’s CX22TM Ceiling Antenna, 17 of which were installed throughout the casino. In the Central Building, where the tops of some of the gaming machines almost touch the ceiling, and where the main IDF closet is also located, five of RF Venue’s wall-mount Diversity Fin® antennas (four black and one white, to match their locations’ color aesthetic) and one CX22 antenna are able to assure signal propagation throughout the complex space. The distances between and within buildings are addressed using a pair of RF Venue’s Optix Series 3 RF over fiber optic (RFoF) conversion transmitters and receivers, a remote antenna extension system that eliminates the need for expensive, fragile and lossy coaxial cable between the North and South Buildings and the IDF closet in the Central Building by converting RF signals into light. With the Optix Series 3, runs of up to 10,000 meters are possible with virtually lossless transmission over 1310-nm single-mode fiber cable. “The Optix system was able to take the RF signal over the longest distance we had to run on this project – over 1,000 feet from the South Building to the Central Building – with zero latency issues,” says Covey. “Without the Optix system, it would have required a huge amount of cabling and amplifiers to boost the signal along to way to overcome cable loss.”

All of those RF signals are then routed to one of five RF Venue 4 ZONE™ active antenna combiners, which combine up to four separate pairs of diversity antenna connections. From there, the signals are routed to a DISTRO4 antenna distribution amplifier, RF Venue’s four-way active antenna splitter plus cascade port that can share one pair of Diversity antennas with up to four wireless receivers, in this case Shure QLXD wireless receivers, for the casino’s two Shure SM58 wireless handheld microphones. Other RF Venue products include four In-Line RF Amplifiers, installed in the North Building and designed to compensate for signal loss on the longer coax cable runs needed there.

“RF Venue had everything needed to accomplish what this project needed,” says Covey. “The casino managers were very happy with the outcome, which is clear sound and zero dropouts anywhere in the casino.”

More information is available at [rfvenue.com](https://hubs.li/Q011VLWW0).

Photo file 1: NewCastle\_Signage.jpg

Photo caption 1: AVL Systems Design turned to solutions from RF Venue to address complex geometry and distance challenges at Newcastle casino, incorporating Diversity Fin and CX22 antennas, Optix Series 3 RF over fiber optic systems, 4 ZONEactive antenna combiners and a DISTRO4 antenna distribution amplifier

Photo file 2: RF-Venue\_cx22.jpg

Photo caption 2: 17 RF Venue CX22™ Ceiling Antennas are inconspicuously mounted to ceiling tiles throughout New Castle Casino

Photo file 3: RF-Venue\_DFin.jpg

Photo caption 3: Five RF Venue Diversity Fin® antennas are deployed in New Castle Casino’s central building

**About RF Venue**

[RF Venue, Inc.](https://hubs.li/Q011VLWW0), is an innovative and fast-growing developer and manufacturer of patented antenna and RF communications products headquartered near Boston, Massachusetts, USA. The company’s mission is to help anyone who needs to speak, listen, or perform – indoors or outside – communicate reliably without the distraction of signal dropouts or interference. The company provides high-quality affordable aftermarket antenna and accessory solutions to improve the performance of any manufacturer’s wireless microphone and in-ear monitor (IEM) systems. Markets include houses of worship, schools, business venues and performance spaces worldwide. RF Venue is known for its highly successful CP Beam™, RF Spotlight™ and Diversity Fin® antennas, along with other RF products. Visit [rfvenue.com](https://hubs.li/Q011VLWW0) to learn more.