

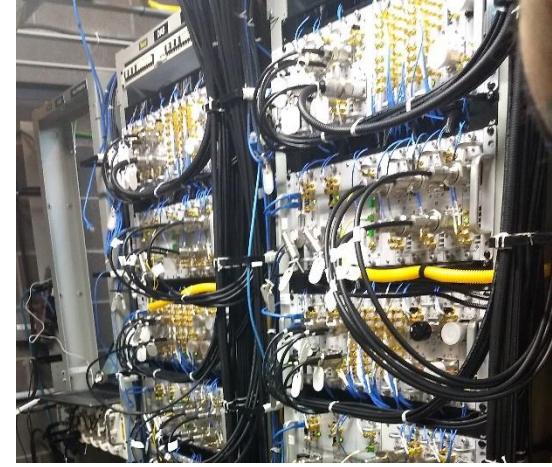


Seattle Tunnel

Case Study - ADRF Delivers Seamless Wireless Coverage to the Seattle SR99 Tunnel



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Case Study

Location: Seattle, WA
Size: 18 miles (2.8 km), 4 lanes, double deck
Customers: AT&T, Sprint, T-Mobile, and Verizon Wireless
Frequency Bands: 700, 850, 1900, 2100, 2300 and 2600 MHz

Overview

Seattle's newest tunnel provides a direct route on SR 99 between the stadiums and the Space Needle. It is the largest double-deck highway tunnel of its kind in the country, and features modern safety and operations systems. In the rare event an emergency requires drivers and passengers to leave the roadway, there are doors every 650 feet leading to safe areas to wait or exit the tunnel. An exit pathway runs the entire length of the tunnel and equipped with its own state-of-the-art ventilation and fire suppression systems. Tunnel operators will monitor the SR 99 tunnel 24 hours a day, 7 days a week, utilizing an extensive camera system able to detect anything unusual inside the SR 99 tunnel.

As part of its smart safety system, the SR 99 tunnel needed a solution that enables wireless coverage throughout the tunnels. The system needed to survive harsh underground environment with limited space. It also had to support all carrier networks and be approved by Seattle transit authority.

ADRF teamed with carriers and a system integrator to design and install its ADXV DAS to address the objective to enable wireless communications throughout the tunnels. 4 MIMO sectors were used to cover 2 mile-long tunnels. The installation was successfully completed before the grand opening in February, 2019.

Challenges

- The two-mile long underground SR99 highway required cellular coverage throughout the tunnels.
- The harsh subterranean environment and thick concrete walls under the ground created special challenges with RF design and cable and equipment installations.
- The system had to support 3G and 4G technologies and all major wireless carriers with limited telecom room space.

Solutions

- ADRF's ADXV Distributed Antenna System (DAS) was deployed to robustly support all carrier networks.
- 16 Headend Chassis and 20 Remotes were installed ensuring mobile coverage inside the tunnels.
- ADXV supports 3G and 4G technologies and all major wireless carriers to support both voice and data usage.

About ADRF

ADRF is the leading provider of in-building wireless solutions that ensure reliable connectivity in venues of any size, shape and location. Established in 1999 in Burbank, CA, ADRF prides itself on having a customer-centric focus, designing solutions that meet each customer's unique needs, while providing a pathway to scale for the future. Today, we serve some of the world's leading enterprises, system integrators, public safety entities, neutral host operators, and wireless service providers.

ADRF is TL 9000 and ISO 9001 certified. Our solutions are modular and designed to provide flexibility, scalability and lower cost of ownership as you only pay for what you need. We have a comprehensive portfolio of in-building wireless solutions including Distributed Antenna Systems (DAS), Repeaters, Antennas, and Components, and our vertically integrated supply chain allows us to maintain the industry's highest reliability and shortest lead times.