

Network Redundancy and First Net - Mesa Fire Department

Case Focus

The Challenge

FirstNet, the U.S. public safety broadband network for critical communications, is coming soon making connectivity a necessity, not a luxury. Already some trail-blazing services are using a broadband system in their operations. However, in 2018 one of these services, Mesa Fire and Medical Department in Arizona, experienced a 17-hour commercial network outage putting their operations at risk.

Their fire trucks were unable to receive dispatch information, and they could not access patient information on iPads used by personnel. This issue forced them to look at their options for broadband redundancy and how this issue may be resolved in the future for FirstNet.

The Client

Mesa Fire and Medical Department was established and organized in 1898. It has grown to twenty stations that house twenty-four Engines, 427 sworn personnel and 113 civilian personnel in support staff positions.

The department services the city of Mesa, the third-largest city in Arizona with around 500,000 people. Their mission is: 'To Serve With C.A.R.E, Compassion. Accountability. Respect. Excellence.



“Redundancy on my fire trucks is my ultimate goal. We verified that if AT&T dropped off, Verizon picked up and vice versa.”
- Brian Yox, Deputy Chief of Technical Services

The Antenna

LGMQM4-7-38-24-58



The LGMQM4-7-38-24-58 is one of the latest products from Panorama Antennas and is the premier low profile MiMo antenna for the next generation of vehicular LTE routers.

The antenna contains up to nine isolated antenna elements; four ultra-wide-band LTE elements covering 698-3800MHz; four dual band Wi-Fi elements covering 2.4/4.9-6.0GHz; and a high performance GPS/GNSS antenna with an integrated 26dB gain LNA.

The antenna does not require a metallic ground plane, and maintains a high level of performance even when mounted on a non-metallic surface.

The Solution

Due to the antenna having four LTE elements in one housing it is the ideal antenna to be able to supply an emergency service with network redundancy and connectivity security in an emergency network outage. Mesa Fire Department tested the LGMQM4-7-38-24-58's ability to handle dual carriers and "failover" with a Cradlepoint COR IBR1700 router with two SIMs, one for the FirstNet (AT&T) network and one for the Verizon network.

This combination of this equipment proved to be a success and the goal of network redundancy realized. When one network could not get through or dropped out, the other was ready to pick up service.

The LGMQM4-7-38-24-58 was the single antenna fixed for a dual carrier solution providing reliable cellular coverage across two networks.

This trial shows the potential of secure failover connectivity for the future of FirstNet

