

Case Study

Zeroing in on an Interference Source with VIAVI InterferenceAdvisor and AntennaAdvisor

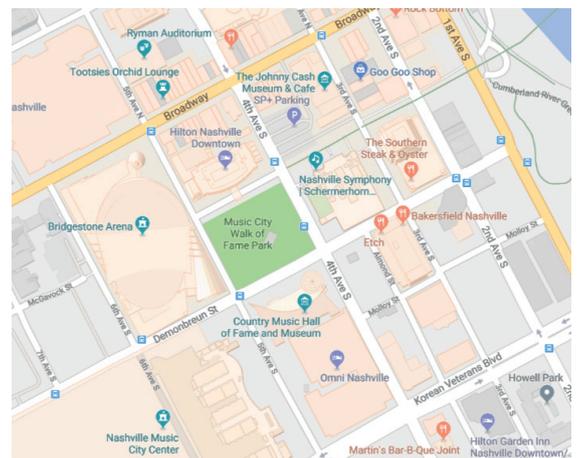
The Challenge

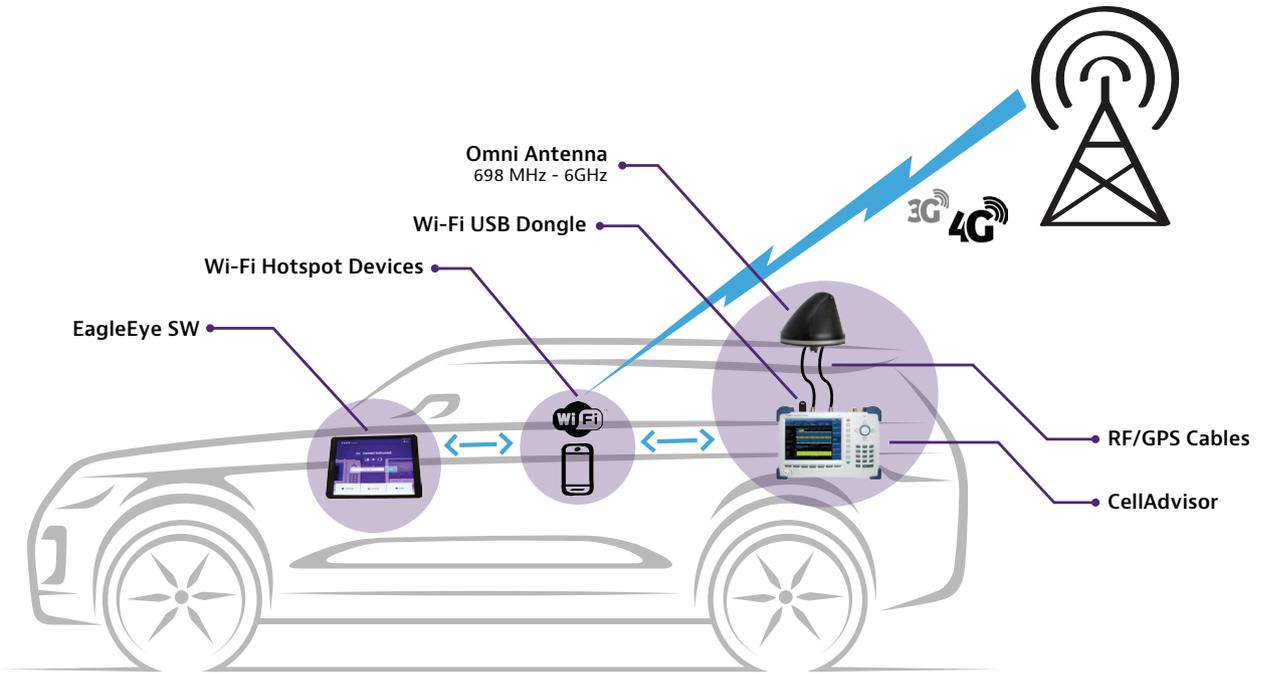
A Tier-1 US service provider in Nashville, TN, was suffering from a bad case of Music City blues due to the sudden appearance of a rogue interferer. Several downtown macro sites around Bridgestone Arena, home of the NHL's Nashville Predators, abruptly started reporting high noise on Physical Resource Block (PRB) 19.

Using OSS data, the team identified the cells and sectors affected by the interferer, but couldn't determine the direction of the source precisely. The signal even showed up on all 3 sectors of one site at about the same level, which is not surprising due to dense urban surroundings, with many buildings to reflect the RF signals.

The Solution

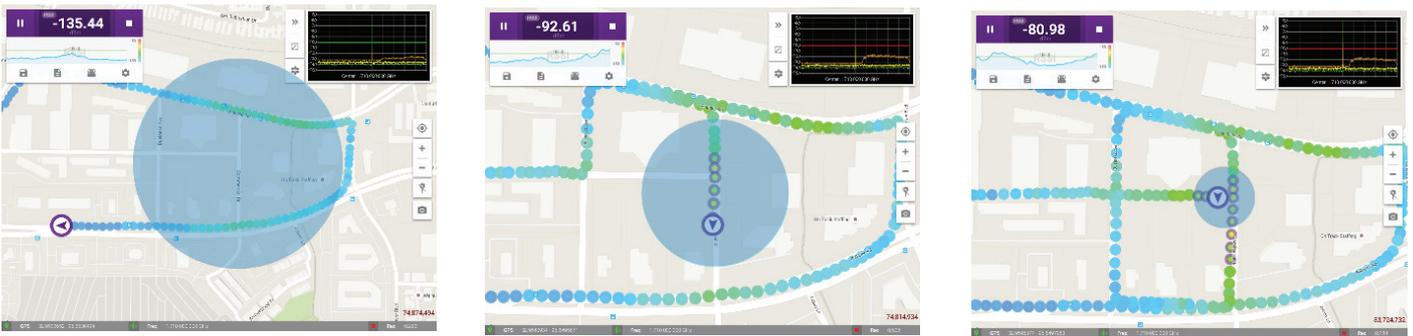
The first order of business was to narrow down the interference area using VIAVI InterferenceAdvisor™ and EagleEye™ software.





The InterferenceAdvisor Solution

In less than an hour of driving with InterferenceAdvisor, the team narrowed the source area down to the block across from the Bridgestone Arena itself. The interfering signal was coming in hot at around -50dBm



A drive with EagleEye software indicates the strongest interference area.

Next it was time to pinpoint the source on foot using VIAVI AntennaAdvisor™.

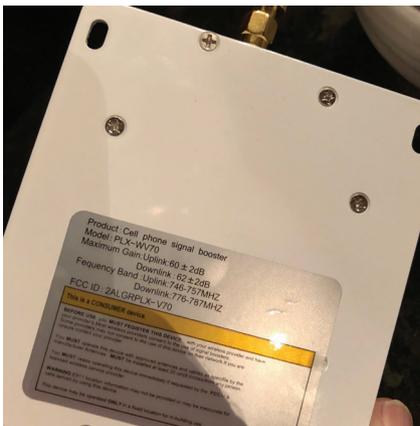


Pinpointing the source with AntennaAdvisor

Using the directional antenna with the Radar Chart option, the team was vectored across the parking lot toward a two-story brick building. As the team approached the building, the signal strength got hotter and hotter, into the -30's, then -20's, and even the teens! The back wall of the building was all brick, with no visible windows. There were no visible antennas on the roof or sides of the building. There were a couple of security cameras mounted between the first and second stories aimed toward the back alley.

The Results

The team went to the building's entrance and spoke to the IT manager. He confirmed that he had recently installed a wireless repeater, purchased online, to boost RF signal in a back office.



Repeater that caused the interference

After the repeater was shut down, the team used VIAVI CellAdvisor and verified that that the rogue signal was gone.

So, in less than two hours (drive testing plus walk testing), using VIAVI InterferenceAdvisor and AntennaAdvisor, the Tier-1 service provider's RF performance team was able to isolate and then eliminate a rogue interferer and prevent performance degradation to the service provider's Nashville cellular network.

Summary

Several types of licensed and unlicensed transmitters can generate interference signals that decrease service quality. Identifying, isolating, and eliminating this interference—quickly—is an absolute must for wireless service providers. Following a simple workflow using VIAVI InterferenceAdvisor and AntennaAdvisor, service provider engineers and technicians can quickly identify, isolate, and eliminate interference sources.



For more information, visit www.viavisolutions.com/interferenceadvisor.