

Case Study

# Quickly Detect, Identify, and Locate Interference Sources

A service provider eliminates interference from an unauthorized signal booster thanks to VIAVI InterferenceAdvisor™

Mobile repeaters or signal boosters are wireless devices used to enhance coverage by amplifying and re-transmitting the mobile signals in areas of poor signal quality. At a subscriber level, with access to the repeater, quality of experience is greatly improved. However, other users sharing the same channel may not be so fortunate, as these devices are transmitting at a much higher power on the same channel as the service provider. Without any network coordination or control, they can cause significant interference, impacting network performance. The biggest challenge is to locate these repeaters and to take necessary action to eliminate the source of interference. Finding and eliminating RF interference is very important to ensure best ROI for the service provider and QoE for the user.

## Challenge: RF Interference in 900MHz UMTS Band

In some countries of Southeast Asia (SEA), consumers are augmenting weak coverage by using unauthorized signal boosters, as these devices are available online at a very low price. Unfortunately these devices cause headaches for service providers, as the signals they generate significantly increase the noise floor, causing QoE issues for nearby users. This problem is exacerbated in a dense residential neighborhood, where a lot of users are close to each other.

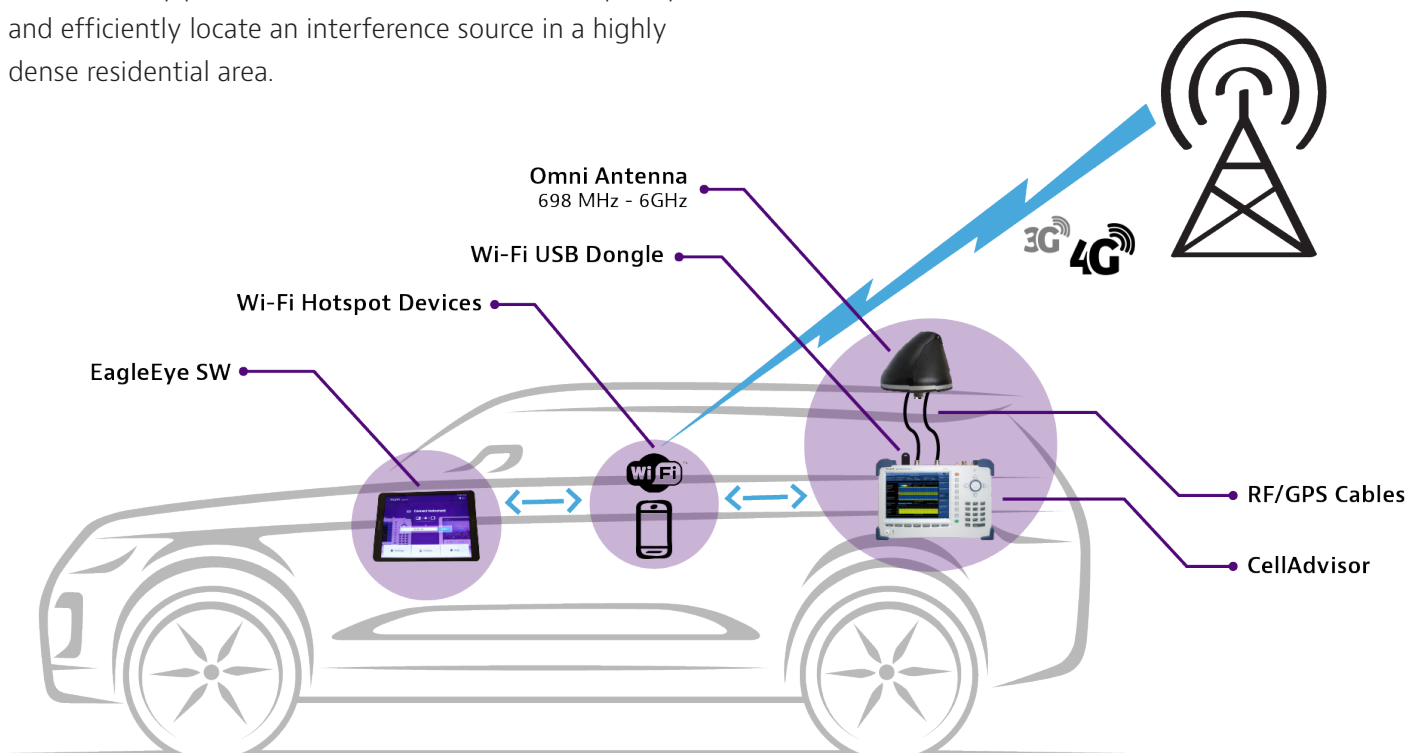
Locating these devices in a dense urban environment, where the interfering signal can bounce off objects (reflection) and take multiple paths, is exponentially difficult. RF engineers have to spend days, if not weeks, locating the source of interference by walking around the neighborhood with a spectrum analyzer and a Yagi antenna. The tools used today are not efficient, easy to use, or cost effective. RF engineers need a better interference hunting solution that can quickly and efficiently locate and isolate the source of interference.

In this application note, we will discuss a similar scenario encountered by a service provider in the SEA region, and how they partnered with VIAVI Solutions to quickly and efficiently locate an interference source in a highly dense residential area.

## Solution: Detecting, Identifying, and Locating an Interference Source

VIAVI InterferenceAdvisor, fully automated interference hunting solution, is the most user friendly solution available today. Easy to set up and completely intuitive, InterferenceAdvisor allows one RF engineer to easily identify and locate an interference source in hours with minimal effort: voice prompts simply direct the engineer to the source of interference.

Using the InterferenceAdvisor EagleEye™ software running on an Android tablet, with a CellAdvisor™ Base Station Analyzer connected to a broadband Omni-antenna, a drive was conducted of the affected area.

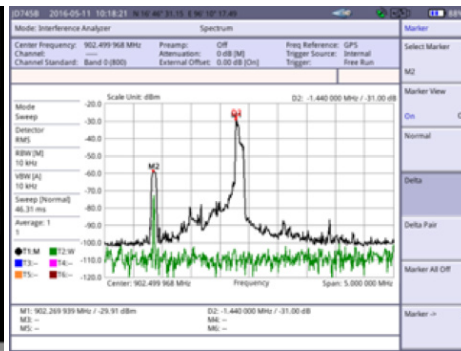
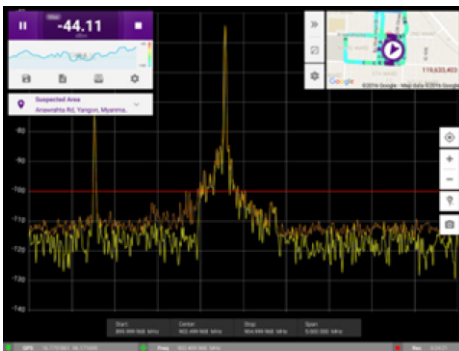


In this case, the affected area consisted of several high rise residential buildings. All of the streets between those buildings had to be driven to identify the highest probability path for the location of the interference source.



**InterferenceAdvisor guides the engineer to the most probable interference source location**

Once the EagleEye Location Estimation Engine (LEE) identified the most probable area, the RF engineer was able to pinpoint the interfering source by using the AntennaAdvisor handle with a directional antenna, and optimizing the noise and sweep speed of the spectrum analyzer. The engineer quickly located an unauthorized repeater installed on the second floor of one of the residences.



## Conclusion

Service providers need a solution that can help them quickly and efficiently locate and eliminate interference issues. VIAVI InterferenceAdvisor offers a comprehensive, cost effective solution to identify interference sources.



Contact Us **+1 844 GO VIAVI**  
(+1 844 468 4284)

To reach the VIAVI office nearest you,  
visit [viavisolutions.com/contact](http://viavisolutions.com/contact)

© 2020 VIAVI Solutions Inc.  
Product specifications and descriptions in this document are subject to change without notice.  
DetectIdentify-cs-nsd-tm-ae  
30179790 900 0616