



# Solving a High RSSI Issue with InterferenceAdvisor™

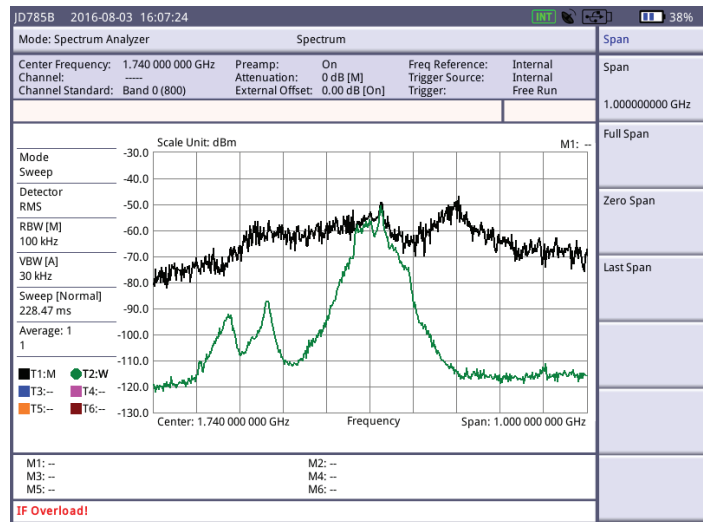
Improper installation of a service antenna caused high RSSI problems, affecting LTE services.

The uplink (UL) Received Signal Strength Indicator, or RSSI, indicates the total wideband received power within the entire channel bandwidth. UL RSSI that is too high will contribute to poor network quality. Interference caused by the high noise floor can lead to frequent dropped calls, call setup failure, and poor voice quality.

An RF repeater contains bi-directional amplifiers (BDA), which consist of forward- and reverse-power amplifiers, as well as duplexer filters for forward and reverse paths. One of the frequent problems with in-building installations is inadequate gain control of the BDA, causing saturation in the donor site.

A service provider in Southeast Asia was experiencing the following RSSI issues:

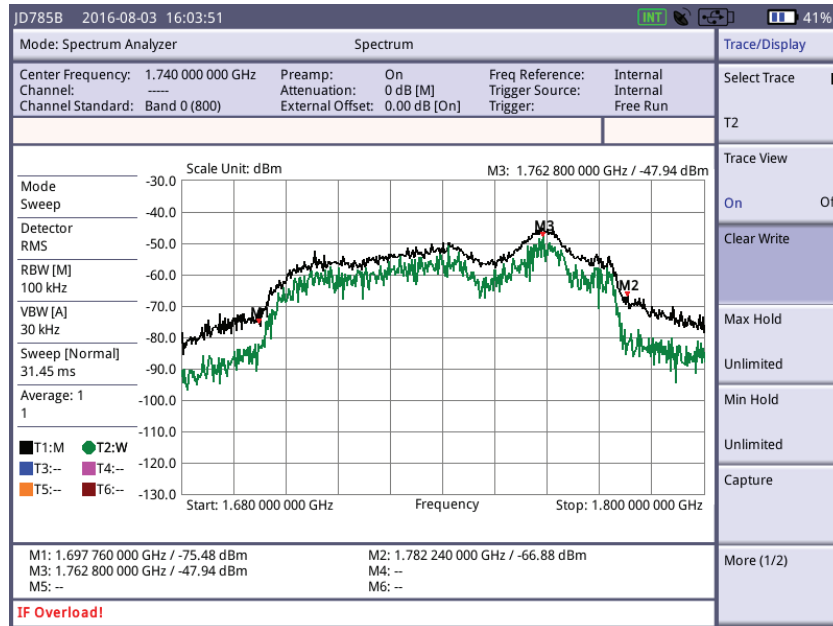
- The affected area consisted of several residential buildings
- All of the streets between those buildings had to be covered to identify the location of highest power (minimum number of reflections) of the interference source



High noise floor across the spectrum

## Understanding the interference characteristics

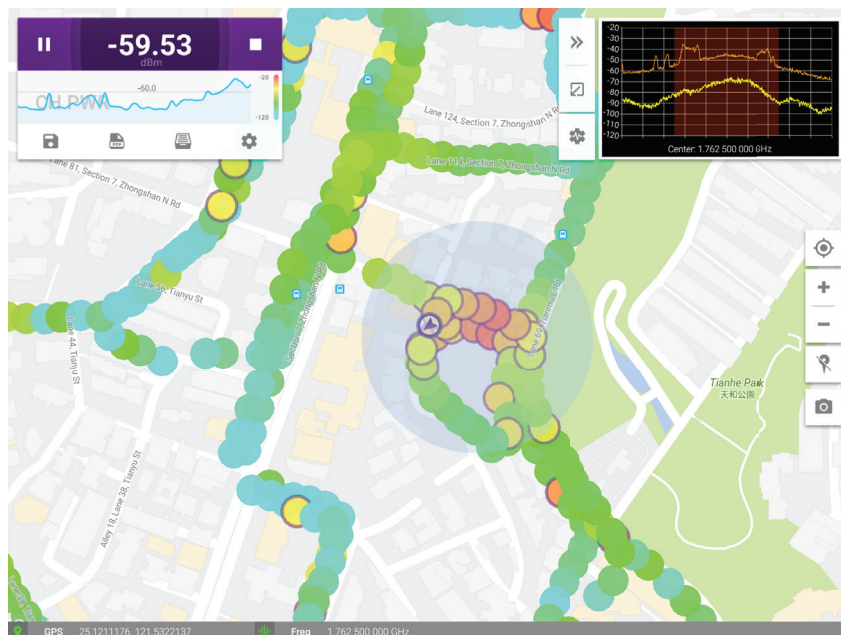
The service provider reached out to Viavi to see if InterferenceAdvisor would be the right solution for locating the interference. While driving the problem area, the team observed a high noise floor spread across 150MHz.



Noise floor goes up across the spectrum, affecting LTE services

## Driving around to find the source area

The team optimized the EagleEye™ software to track down the band noise interference source using its channel power mode, and InterferenceAdvisor successfully located the suspected area after 38 minutes of drive testing.



Received high noise over LTE UL band in located area

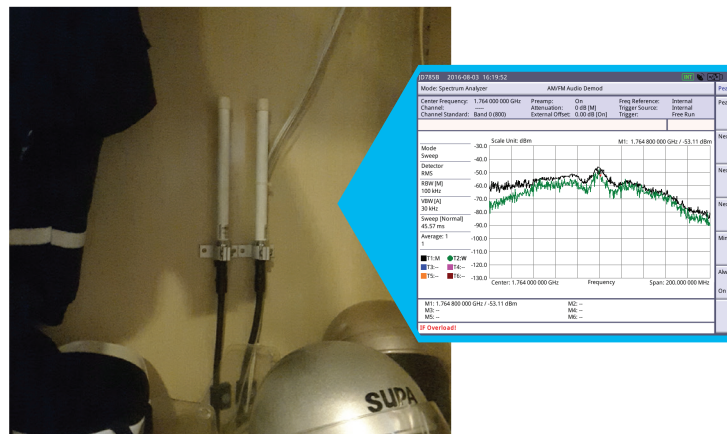
## Manually locating the source in the suspected area

The team then conducted a local interference hunt, using Viavi CellAdvisor™ and AntennaAdvisor. The strongest signal was coming from a luxury apartment building, where the team successfully located the interference source on the ground floor.

The source of the interference was quickly identified as a repeater service antenna installed on the first floor. As soon as the antenna was removed from service, the interference issue was resolved.



The strongest signal was coming from a luxury apartment building.



The interference source: a repeater antenna on the first floor.

## Best Practices

- Start with the problem site
- Drive around a relatively large area to understand the problem details and the interferer's characteristics (e.g. intermittent, single-tone, multi-peak, oscillating, drifting, band-noise, etc.)
- Optimize EagleEye settings using three different tracking modes (RSSI, Channel Power and Peak Power)
- Drive in the direction of the strongest signal to estimate the most probable location of the source (circle indication, directions, and navigation)
- Manually pinpoint the source using AntennaAdvisor within the estimated area



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