

Co-Site Interference Analysis



Wireless technology is one of the most pervasive and disruptive technologies of the modern world. Radios and wireless devices have widespread applications, and much of the available spectrum has been allocated and consumed. Further, more and more radios are being integrated into single physical platforms. These multi-radio platforms can co-locate up to 10 or more antennas in a small, congested footprint. Unsurprisingly, this spectral and physical congestion can cause antennas to interfere with one another, a problem known as co-site interference. If not managed, this interference can result in unacceptable outcomes. Therefore, careful design and consideration must be exercised to ensure reliable performance.

RF Co-Site Interference Analysis

Radio frequency (RF) co-site interference analysis (CSIA) is necessary for cost-effective implementation of multi-antenna scenarios. CSIA helps identify sensitive and critical interference paths. Once identified, further analysis can assess potential remedies and mitigation options. Even to experienced engineers, optimal radio and antenna placement may not be obvious. With all but the simplest of configurations, empirically determining optimal configuration for acceptable performance can be cost prohibitive, labor intensive, and time consuming.



Fig. 1 : Co-located antennas

TeraSys Co-Site Interference Analysis Service

As an experienced and active supplier in the co-site interference mitigation market, TeraSys is pleased to offer a cost effective, risk reducing RF co-site interference analysis service to our Customers. We provide a flexible, efficient, and accurate analysis process that leverages our domain expertise and experience. The following are key offering highlights:

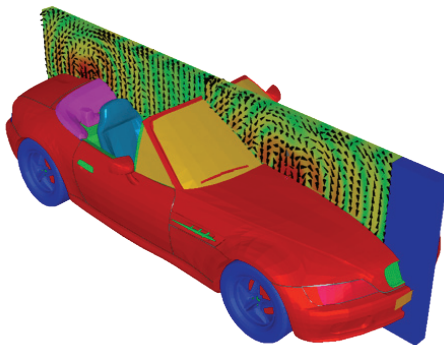


Fig. 2 : Full 3D EM analysis of complex structure

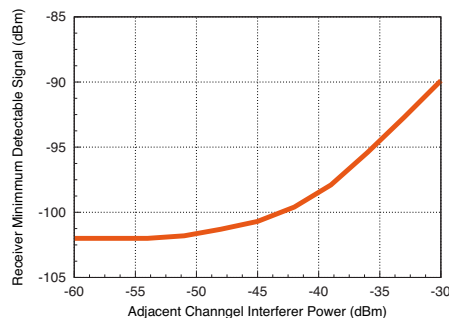


Fig. 3 : Receiver desensitization

- **Arbitrary physical structure analysis**
We have the ability to import and manipulate 3D solid models.
- **Full-wave 3D electromagnetic analysis**
Our 3D electromagnetic (EM) simulation capability allows for an all-inclusive analysis of scattering and dielectric surfaces, near-field, and far-field antenna coupling.
- **Time efficient processing**
We employ adaptive on-the-fly processing for EM calculations, reducing simulation time from hours to minutes. Also, our automated antenna optimization algorithm aids in quickly identifying optimal antenna placement.
- **Interference impact analysis**
As domain experts, we can not only identify interference issues, but also understand them. We are fully versed in the interference mechanisms and impacts to transceivers. We enable our Customer to understand why and the severity by which they experience interference.
- **Multi-format data outputs**
Choose from numerical and graphical outputs, including: raw numerical tables, field visualizations, and spatial coverage "heatmaps."
- **Mitigation consultation**
As an innovative interference mitigation technologies provider, we can recommend appropriate mitigation solutions to our Customers.