



# CONNECTED CAR

## Challenges and Interference Mitigation

### Abstract

The connected car promises to provide substantial improvements to the automotive industry in a variety of ways. However, a number of challenges remain in providing the data links that forms the backbone of connected cars. Among these challenges, problems associated with interference mitigation are the most critical and the hardest to solve. This paper discusses those challenges and presents the solutions that will one day make connected cars a reality.

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The last key challenge with connected cars is the need for much greater bandwidth. The amount of data transmitted to and from the connected car is expected to be massively greater than that used in any smart phone or car on the road today. Some of the applications that particularly require greater bandwidth capabilities include LIDAR and video streaming systems. Other key applications driving data usage are vehicle telemetry, increased entertainment options, vehicle-to-vehicle coordination and vehicle to road infrastructure coordination.

## Interference Mitigation

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The solution to all three challenges, in part, can be described as “improved interference mitigation.” Traditional approaches to interference mitigation rely in large part on power management and network coordination. These approaches work well in cases where mobile devices are moving relatively slowly and the system can tolerate large latency, which allows the network equipment to adjust to manage the power levels and optimize the system.

Bascom Hunter’s approach to improved interference mitigation is built on a photonic-based, high-resolution wideband interference cancellation system. It is adaptive, compact, and capable of removing high-power interference in band or in close proximity to the signal of interest. The technology has been tested and validated with results showing over two orders of magnitude greater performance than existing products.

Bascom Hunter’s technology offers several key advantages over current technology, including: greater levels of interference removal; lower distortion of the signal of interest; higher dynamic range; less sensitivity to IEM; and better operation over wide bandwidth.

## About Bascom Hunter

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Over the last five years, the amount of data sent wirelessly has increased tenfold. The result is a dramatic increase in demand for wireless bandwidth, which has seen exponential growth with no foreseeable slowdown. The finite resource of available radio frequency spectrum, however, is plagued by unreliable coverage and signal interference so much so that today’s solutions simply will not meet tomorrow’s demand. Bascom Hunter’s mission is to enable customers to get the most out of the RF technology revolution. We provide the leading solutions to wireless communication and security at competitive prices. Contact us today to learn how our products can help you address coverage problems and take full advantage of wireless technologies in any industry.

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