CO-SITE INTERFERENCE

Quick Universal Interference Elimination Cancellation Technology

Abstract

Modern communications are becoming more complex and require operation over wider bands and in some case multiple bands simultaneously. In additional these system are being operating in the presents of other system in compact spaces. This results in major co-site interference problems. This paper presents a solution to the co-site interference problem.

Jun 18, 2015

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Co-Site Interference

Quick Universal Interference Elimination Technology

Bascom Hunter's Quick Universal Interference Elimination Technology (QUIET) allows for rapid removal of in-band interference from wireless communication networks. QUIET removes interference caused by RF congestion or intentional jamming. This allows for higher wireless network capacity and improved wireless network reliability. QUIET is a small "plug-and-play" box that can be inserted into existing communication systems, requiring only minor changes to existing communications system architecture. Applications of the technology include Public Safety Radio Networks, Military Platforms, and Satellite Communication Systems.

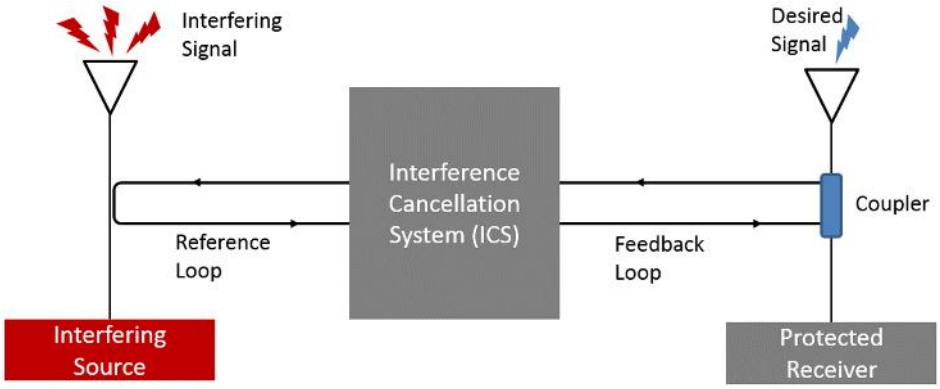
The Problem

Modern communications are becoming more complex and require operation over wider bands and in some case multiple bands simultaneously. In additional these system are being operating in presents of other system in compact spaces. This results in major co-site interference problems. This result in many receivers having levels of interference from co-sited transmitters that cause unacceptable noise levels and some receivers may be driven into failure. It also will increase the power drain on the mobile devices as the unit increase transmission power to overcome the high noise.

The Solution

Bascom Hunter QUIET operates by removal of interference by injecting an accurately scaled anti-phase version of the interfering RF signal. This can be achieved for multiple transmitters and receivers covering the entire RF spectrum. The principle is similar to audio noise cancellation systems in mobile phones and hearing aids. QUIET can handle very high levels of received interference and at the high hopping speeds of modern frequency agile transmitters. A sample of the signal from the co-sited transmitter is taken using a directional coupler in the transmit antenna feed. It is then scaled in phase and amplitude before being algebraically added to the receive path to cancel out the co-sited interference. One of the keys to QUIET is the use of optical components to carry out the matching. This allows for

substantially higher performance than approaches base on digital and RF electronics. Further it is very fast providing virtually no impact to the latency of the communication link.



Modular and Adaptable

Multiple interfering transmitters can be cancelled by allocating a cancelling module for each interfering transmitter or by utilizing the wideband nature of the system to protect multiple receiving with a single system. QUIET is fully adaptive, it does not need a direct interface to the transmitter or receiver. By interfacing only with the antenna feed cables it ensures that installation on new or legacy platforms is a straight forward process.

About Bascom Hunter

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.

Contact Bascom Hunter

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