

Antennas for Agile and Cognitive Radio

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Abstract

Antennas are important components in any radio system. Proposed frequency agile and cognitive radio systems place unique and difficult-to-achieve demands on the bandwidth, radiation patterns, efficiency, physical construction and cost of antennas suitable for the VHF through SHF bands: 30 MHz to 30 GHz. A brief summary of RF channel characteristics (signal, noise and interference) is discussed for this frequency range, followed by examples of contemporary antennas and their performance. Emerging and esoteric antenna techniques and actual designs suitable for supporting agile and cognitive radio systems will be presented. The examples will include antennas suitable for: fixed, vehicular and body worn applications.