Abstracts

Low-profile enhanced-bandwidth PIFA antennas for wireless communications packaging

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The development of small integrated antennas plays a significant role in the progress of the rapidly expanding military and commercial communications applications. The recent advances in RF and microwave high-density circuit packaging technologies in multifunction wireless communications systems have called for the parallel development of compact and efficient antennas that can be used over a wide frequency range. This paper addresses the development and characterization of several low-profile and integrated antennas with enhanced bandwidth for wireless communications systems. The new radiators are developed by adding parasitic elements or tuning devices to a familiar integrated antenna-the planar inverted F antenna (PIFA). Simulations based upon the finite-difference time-domain (FDTD) method and method of moments (MoM) are used to model the performance of the antennas. Comparisons with measured results on fabricated antenna structures are provided for simulations validation.

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