

# Abstract

**Hussein H. Ghouz**

## **New Compact Microstrip Patch Filtenna Structures with Partitioned Ground for 3G/4G Applications**

In this paper, new compact narrowband, broadband and ultra-wideband microstrip patch filtenna structures (dual/triple/forth) have been proposed and presented. The proposed filtennas have been analyzed, investigated and optimized using the microwave CST\_Studio simulator for three different ground geometries. The presented filtenna structures are mounted on FR4-substrate, and resonate within the band from 3.0 GHz up to 18 GHz. Simulation results show that using the concept of partitioned ground (Digital ground Structure), the resonance frequencies as well as the operating bands of the patch filtenna can be controlled. The presented paper added a new concept for filtenna design.