

Abstract:

A new reconfigurable antenna for smartphone with a small ground plane clearance is proposed. The most important figure-of-merit of this design is that it covers all recent wireless frequency applications for smartphone devices. The methodology utilizes the use of two switches between the metallic frame and the system circuit board to tune the fundamental resonant frequency modes of a couple loop and a slot monopole. The design uses a microstrip-feeding strip line to excite the loop and slot modes, the feeding line also acts as an internal antenna structure. By combining two working states of the switches, the design covers all wireless standard up to 6 GHz. The simulated total efficiency of the proposed antenna is shown to be high enough to guarantee a successful operation for both the lower and higher bands.