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Multi Antenna Systems for 5G Mobile Phones

Authors : Muhammad N. Khan, Syed O. Gillani, Mohsin Jamil, Tarbia Iftikhar

Abstract : With the increasing demand of bandwidth and data rate, there is a dire need to implement antenna systems in mobile phones which are able to fulfill user requirements. A monopole antenna system with multi-antennas configurations is proposed considering the feasibility and user demand. The multi-antenna structure is referred to as multi-input multi-output (MIMO) antenna system. The multi-antenna system comprises of 4 antennas operating below 6 GHz frequency bands for 4G/LTE and 4 antenna for 5G applications at 28 GHz and the dimension of board is 120 × 70 × 0.8mm3. The suggested designs is feasible with a structure of low-profile planar-antenna and is adaptable to smart cell phones and handheld devices. To the best of our knowledge, this is the first design compared to the literature by having integrated antenna system for two standards, i.e., 4G and 5G. All MIMO antenna systems are simulated on commercially available software, which is high frequency structures simulator (HFSS).

Keywords : high frequency structures simulator (HFSS), mutli-input multi-output (MIMO), monopole antenna, slot antenna
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