

Design and Development of MIMO Antenna for Wireless Communications

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Abstract: *A high-isolation eight-antenna multi-input multi-output (MIMO) array running in the 3.5 – 3.6 GHz band for future smartphones is proposed. Here, a novel balanced open-slot antenna is designed as an array antenna element, in which this antenna diagram can yield a balanced slot mode (with decreased ground effects) that can enhance the isolation between two adjoining enter ports. Furthermore, by means of meticulously arranging the positions of the eight antenna elements, proper polarization variety can additionally be correctly achieved, which similarly mitigates the coupling between antenna elements. A prototype used to be manufactured to validate the simulation. A excellent impedance matching (return loss >10 dB), excessive isolation(>17.5 dB), high complete effectivity (>63%), and low envelope correlation coefficient (ECC, <0.05) had been measured throughout the preferred operation bandwidth.*

Keywords: 5G smartphone, balanced open-slot antenna, massive multi-input multi-output (MIMO), MIMO antenna.

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