

Dual-Element Antenna System for Hexa-band Smartphone MIMO Applications

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Source: Loughborough Antennas & Propagation Conference (LAPC 2017), 2017 page 65 (5 .)

Conference: [Loughborough Antennas & Propagation Conference \(LAPC 2017\)](#)

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A new low-profile dual-element antenna is proposed for hexa-band Smartphone MIMO applications. It consists of two antenna structures in which, each one excite orthogonal characteristic mode to achieve isolation very easily below 1 GHz. Both elements (the metal frame antennas and the internal PILA antenna) are is analyzed and optimized in terms of the reflection coefficient and the current distribution. The final design (dual-element) is made and tested in terms of S-parameters, envelope correlation coefficient, mean effective gain and the diversity gain. The results show that this design is a good candidate for hexaband MIMO applications and in particularly suitable for such as GSM850/DCS1800/PCS1900/UMTS2100/LTE2500/LTE3600 mobile applications.

DOI: [10.1049/cp.2017.0289](#)

ISBN: 978-1-78561-699-0

Location: Loughborough, UK

Conference date: 13-14 Nov. 2017

Format: PDF

Inspeck keywords: [current density](#); [MIMO communication](#); [S-parameters](#); [multifrequency antennas](#); [smart phones](#)

Subjects: [Radio links and equipment](#); [Single antennas](#)