Wearable Monopole Textile Antenna for IoT Application

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Nurhayati Nurhayati ; Nessa Nabila Uma ; Maheshinta Yunia Farentina ; Ratna Dwi Safitri ; Agam Nizar Dwi Nur Fahmi ; Wa'il A. Godaymi Al-Tumah **All Authors**

Abstract:
This article presents a flower-shaped textile monopole antenna that is beneficial for broadband applications. The operating frequency band of the textile Monopole antenna can be shifted by varying the height of the antenna flower crown. In this research, Monopole Antennas, namely Monopole Antenna A (MA-A), Monopole Antenna B (MA-B), Monopole Antenna C (MA-C), and Monopole Antenna D (MA-D) with dimensions of 32.5×70×1 mm^3have been designed using a felt substrate with a thickness of 1 mm and using the material The patch is shieldit with a thickness of 0.017 mm. From the simulation results it was found that the antenna can work at most frequencies from 1 GHz to 25 GHz. The MA-C has the best resonance at 2.27 GHz of -37,11 dB, while MA-D has resonant frequencies at 2.416 GHz of -21.38 dB and at 3.74 GHz of -32.74 dB. The MA-D antenna has a SAR of 0.65 W/kg so it can be used for wearable devices for Wifi or IoT applications.

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