

# Flexible Wide Band Antennas for 5G Application

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**Abstract:** A modified microstrip patch antenna is implemented on Polyethylene terephthalate (PET) substrate with a thickness of 0.125 mm for 5G applications. The wideband antenna of 60 375 mm<sup>2</sup> total dimensions is fabricated using novel inkjet printer and silver nano-particles as the conductive ink. The designed and fabricated antenna operates within 7 to 13 GHz and exhibits almost omnidirectional radiation pattern with an average gain of 5 dBi. The flexible antenna was also tested under bending conditions and showed good performance within the Xband region. The originality of the work lies in the combination of the antenna's structure, flexibility, and targeted frequency of operation. The flexible antenna was also tested under bending conditions and showed good performance within the Xband region. The originality of the work lies in the combination of the antenna's structure, flexibility, and targeted frequency of operation.

**Keywords:** Flexible Antenna, 5G, Wireless, Wideband Antenna

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