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(57) Abstract :

Low profile antennas with low latency, high data rates, and enhanced capacity are much sought after in today's world of massive data traffic, particularly in sub-1GHz wireless applications like biomedical and the Internet of Things (IoT). An optimized meander line patch antenna for biomedical and Internet of Things applications was given in this study. Its dimensions were 5 × 35 × 1.6 mm³ and it operated at sub-1GHz. For the flexible substrate and antenna optimization, respectively, the substrate and parameter analyses were completed. With a -10dB reflection coefficient and notable radiation characteristics like a bandwidth of 1108.28 MHz and a maximum gain of 5.1dBi over the working frequency band, the suggested antenna operated in the 1.72–1110 MHz frequency range. At the operational band's highest cutoff frequency of 1110MHz, the suggested antenna was 97.41% smaller than a conventional antenna. Over the operational band, the peak resonant frequency is 40MHz, with a reflection coefficient of -45.92dB. The findings of the suggested antenna's co-polarization and cross-polarization show that the properties of the transmitting and receiving antennas significantly match. Keywords: Meander line, Sub-1GHz, Miniaturization, Wideband, IOT and Biomedical.

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