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A wearable low profile asymmetrical slotted ultra-wide band antenna for WBAN applications

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Abstract



In this article a low profile asymmetrical slotted Ultra-Wide Band (UWB) antenna is proposed for Wireless Body Area Networks (WBANs) applications. The antenna was fabricated using Printed Circuit Boards (PCBs). An improved radiation pattern was obtained with an optimized patch shape of the antenna that broadens the bandwidth and lowers the antenna's profile. The proposed antenna is simulated in HFSS and CST Simulator, and the proposed antenna is fabricated on FR4 substrate with the reduced ground plane. In frequency ranges from 2.50 to 10.97 GHz simulation as well as measured results show that the reflection coefficient (S_{11}) of the antenna is below -10 dB and increased impedance bandwidth of 126%. The proposed antenna has desired radiation pattern and gain