

A wideband rectangular-ring textile antenna integrated with corner-notched artificial magnetic conductor (AMC) plane

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Received: 15 June 2016 / Accepted: 3 December 2016 / Published online: 18 December 2016
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Abstract This paper presents the design of a wideband artificial magnetic conductor (AMC) for operation in the Wireless Body Area Network Ultra Wideband (WBAN-UWB) mandatory channel 6. The proposed AMC is incorporated onto a rectangular-ring patch antenna for operation centered at 8 GHz with 2 GHz of bandwidth. The incorporation of the AMC improved the antenna reflection coefficient and impedance bandwidth, besides shielding the radiator against on-body detuning. The prototype is fully fabricated using textiles except for an SMA connector used for feeding. It is observed that the experimental results are in good agreement with the simulations, and bandwidth broadening is successfully achieved and validated.

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