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MIMO UWB Antenna for Exploring Body Centric Communication

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Abstract : The performance of wireless communication systems has been suggested to be improved by UWB MIMO antenna systems. However, creating a successful UWB MIMO antenna is a difficult undertaking that calls for resolving a number of design issues, including radiation efficiency, size, and frequency range. This study's primary objective is to create a novel, highly effective, small-sized, ultra-wideband (UWB) multiple-input multiple-output (MIMO) antenna and investigate its potential applications in body-centric communication. Two radiating elements, shared ground plane, circular stubs, and t-shaped isolation elements are used to achieve the MIMO antenna. Outstanding multiplexing efficiency, significant peak gain across the entire UWB frequency spectrum, extremely low mutual coupling (S21=-16 dB), high diversity gain (DG>9), and low envelop correlation are achieved. The proposed antenna will be one of the promising candidates for body centric communication.

Keywords : UWB communication, UWB MIMO antennas, body-centric communication, diversity gain
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