

Coexistence Issues for Wireless Body Area Networks at 2.45 GHz

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Abstract:

This paper deals with coexistence issues that may arise for Wireless Body Area Networks (WBANs) operating at the 2.45 GHz ISM band. Two different sources of interference are considered: IEEE 802.11 (Wi-Fi) and IEEE 802.15.4 (Zigbee). Firstly, these interfering networks are characterized both in the frequency and in the time domains. Then, the coexistence of a WBAN with these interfering systems is assessed. We consider a WBAN as composed of wearable nodes that communicate with an on-body coordinator and we evaluate the achievable performance for three different physical layers and two different Carrier Sense Multiple Access with Collision Avoidance algorithms.