

Using antenna array for ad hoc networking with UWB

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ABSTRACT

Ultra wideband (UWB) impulse radio (IR) technology has some attractive features that offer great flexibility in the design of a multiaccess ad hoc network. In this work, we aim at developing a smart antenna based MAC protocol for time-hopping UWB (TH-UWB) wireless ad hoc network. Moreover, to further enhance the spatial reuse and system throughput, the access mode considered in this work combines TH-UWB with space-division multiple-access (SDMA) technology. The performances in terms of several design parameters are extensively analyzed to meet specific quality-of-service (QoS) requirements.

Keywords : Ad hoc networks、Quality-of-service (Qos)、Medium access control (MAC)、UWB beamforming、time-hopping UWB (TH-UWB)

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