

Literature Review of Energy Efficient Transmission in Wireless LANs by Using Low-Power Wake-Up Radio

Power consumption is a key consideration in every WLAN MAC protocol design for wireless devices and extending battery life requires more efficient power management scheme considering that Carrier sensing by WLAN modules consumes enormous amount of power. Researchers over the years have proposed and implemented various schemes using a low-power Wake-up Radio for carrier sense which has proven to be effective. In this paper, a comprehensive literature review of the research progress in WuR-based energy saving is presented. This paper compares the various protocols already proposed for mitigating latency and energy consumption in WLAN networks and provides synthesis of wake-up radio (WUR) based carrier sensing approaches with analysis and discussions of merits and limitations of each technique. The operation principles of duty-cycle and wake-up radio bases MAC protocols were looked into in relation to how they affect energy efficiency and latency reduction.

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