Understanding the Features of IEEE 802.11g in High Data Rate Wireless LANs

Abstract

In a practical application scenario, high data rates are required with increasing demand of wireless LANs. To upgrade the data rate of WLANs, the IEEE presented the IEEE 802.11g standard for providing higher data rates up to 54 Mbps at the 2.4 GHz frequency band. In this paper, performance of IEEE 802.11g standard is described with respect to WLANs. The review study of this paper provides the features of IEEE 802.11g by comparing it with previous IEEE standards to evaluate the efficiency of WLANs.

References

- IEEE Std. 802.11g, "Further Higher-Speed Physical Layer Extension in the 2.4 GHz Band," 2003.
GHz Band,"; 2003.
- IEEE Standard for Wireless LAN Medium Access Control (MAC) and Physical Layer
  (PHY) Specifications, Amendment 1: high-speed physical layer in the 5 GHz band (802.11a),
  1999.
- IEEE Standard for Wireless LAN Medium Access Control (MAC) and Physical Layer
  (PHY) Specifications, Amendment 4: Further Higher Data Rate Extension in the 2.4 GHz Band
  (802.11g), June 2003.
- Dimitris Vassis, George Kormentzas, Angelos Rouskas, and Ilias Maglogiannis,
- Shao-Cheng Wang, Yi-Ming Chen, Tsern-Huei Lee, Ahmed Helmy, "Performance
  Evaluations for Hybrid IEEE 802.11b and 802.11g Wireless Networks;" 24th IEEE
  International Performance, Computing, and Communications Conference, pp. 111-118, April
  2005.
  Performance of IEEE 802.11a and 802.11g Wireless Local Area Networks in a Corporate
- Andrzej Duda, "Understanding the Performance of 802.11 Networks;" IEEE
- L. Kleinrock and F. Tobagi, "Packet switching in radio channels, PartII—The
  hidden terminal problem in carrier sense multiple access andthe busy tone solution;" IEEE
- Hongqiang Zhai, Younggoo Kwon and Yuguang Fang, "Performance analysis of
  IEEE 802.11 MAC protocols in wireless LANs;" Wireless Communication and Mobile
- Xpress Technology: Maximizing performance in 802.11 wireless LANs; Broadcom
  BRCM-WP2-802.11-030617.
- M. -J. Ho, J Wang, K Shelby and H Haisch, "IEEE 802.11g OFDM WLAN
  throughput performance;" VTC 2003-Fall.
- Candy Yiu and Suresh Singh, "High Data Rate WLAN;" IEEE Vehicular
- Jan Mikulka and Stanislav Hanus, "Bluetooth and IEEE 802.11b/g Coexistence
- R. Muraleedharan and L. A. Osadciw, Jamming Attack Detection and
  Countermeasures In Wireless Sensor Network Using Ant System, Defence and Security
  Symposium, April 2006.

**Index Terms**

Computer Science

Communication Systems
Keywords
Wireless LANs  IEEE 802. 11g