



STATS Uses same CSMA/CA method as the original 802.11 / Employs 52-subcarrier OFDM modulation

Wireless protocol lags initial expectations



When the IEEE ratified the IEEE 802.11a specification in 1999, many technology providers and observers felt it had a bright future. The 802.11a spec touted raw data rates as high as 54 Mbps, employed the relatively spectrum-uncluttered, 5-GHz FCC Part 15 unlicensed frequency band, and offered 12 nonoverlapping channels. IEEE 802.11b, in contrast, broadcasted on the same 2.4-GHz spectrum that common office and household appliances inhabit, could support only 11-Mbps-peak raw data rates, and used 14 overlapping channels.

Unlike 802.11a, however, 802.11b was backward-compatible with the initial 1- and 2-Mbps 802.11 standard and with its Lucent-developed WaveLAN foundation protocol. Reliance on 2.4 GHz increased the probability of interference, but it also gave 802.11b longer range than 802.11a. A two-year lag between 802.11a-spec ratification and shipping products gave 802.11b an early market lead. And the mid-2003 ratification of 802.11b backward-compatible 802.11g, which also touted 54-Mbps-peak raw data rates, resigned 802.11a to niche status.

Yet, 802.11a lives on: Microsoft, for example, recommends using 802.11a to wirelessly stream high-definition video to its Xbox 360 game console to minimize the probability of packet-delaying and -dropping interference. Many laptop computers' integrated Wi-Fi transceivers, along with many USB, Category 5, and PC Card adapters, support a, b, and g. And the pending 802.11n standard supports optional backward-compatibility with both 2.4- and 5-GHz-based protocols.—by Brian Dipert