802.11b is one of the earlier Wi-Fi standards, operating in the 2.4 GHz frequency band. It was ratified by the IEEE in 1999 as part of the 802.11 family of standards. 802.11b offers a maximum theoretical data rate of up to 11 Mbps.

Key features of 802.11b include:

- **Frequency Band**: It operates in the 2.4 GHz ISM (Industrial, Scientific, and Medical) band, which is a globally available unlicensed spectrum.
- **Modulation Technique**: 802.11b uses direct-sequence spread spectrum (DSSS) modulation for data transmission.
- **Backward Compatibility**: 802.11b devices are generally backward compatible with older 802.11 standards like 802.11a, but at the expense of lower data rates.
- **Interference**: The 2.4 GHz band is shared with other wireless technologies such as Bluetooth devices, cordless phones, and microwave ovens, which can lead to interference and degraded performance.
- **Range**: The range of 802.11b networks is typically limited compared to newer standards due to factors such as lower transmit power and susceptibility to interference.

802.11b was widely adopted due to its relatively low cost and compatibility with existing networking equipment. However, as demand for higher data rates and better performance increased, newer standards like 802.11g and beyond gained prominence, offering faster speeds and improved features.