**Synopsis**:
Radio Frequency Fundamentals

Regarding radio frequency signals, I was aware that some its characteristics included a wavelength, a frequency, and an amplitude. These are some of the fundamentals that I was taught in different science classes throughout my academic career. However, I never truly understood how those signals were produced, how did they become radio signals? Unfortunately for me, this book doesn't provide an in depth understanding of physics, but in a general sense, electrical alternating current signals are sent through a conductor to an antenna which radiates that signal in form of an electromagnetic wave. Easy enough, I suppose, but what the book sheds light on is the electromagnetic spectrum, which is the range of all possible electromagnetic radiation. The signals produced by the antenna move through matter and space, governed by properties such as wavelength, frequency, amplitude, and phase. This all becomes very relevant to me because the majority of Wireless LAN operate using radio waves on different frequencies.
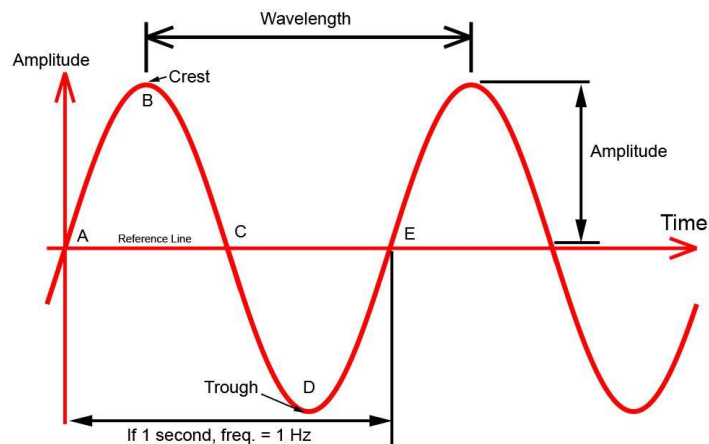
The characteristics of a RF signal can be seen in the image above. It demonstrates the amplitude (maximum displacement of a continuous wave), the wavelength (the distance between two successive peaks), and the frequency (numbers of waves generated in 1 second in this case). What the book adds to my knowledge is phase, which describes the relationship between two waves with the same frequency and how signals with certain degree phase separations can increase or completely null the strength of a signal. This becomes increasingly significant when wave propagation is brought into the picture. Because most of my devices on the network are wirelessly connected, learning more about absorption, reflection, scattering, refraction and diffraction, which all lead to some form of loss (attenuation), became more than just an afterthought. I'm over here figuring out how to point the antennas on my wireless NIC and trying to figure out where to play my wireless access point to avoid the least amount of propagation! The biggest forms of propagation I deal with is absorption. Fun!