

# CECS 5460

November 11, 2004

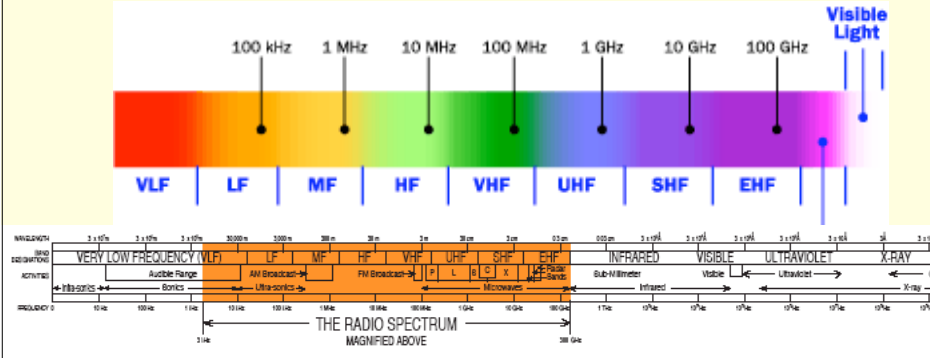
Dr. Greg Jones

## Topics

- Wireless
- Spread Spectrum
- UltraWideband
- Interference
- Cell Phones

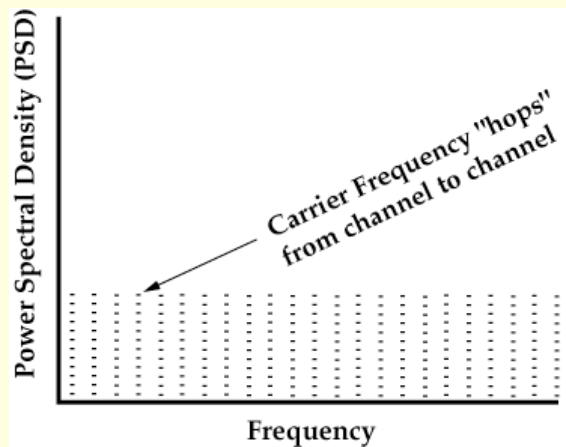
# Wireless

- Communications between one or more devices using a non-wired based method.

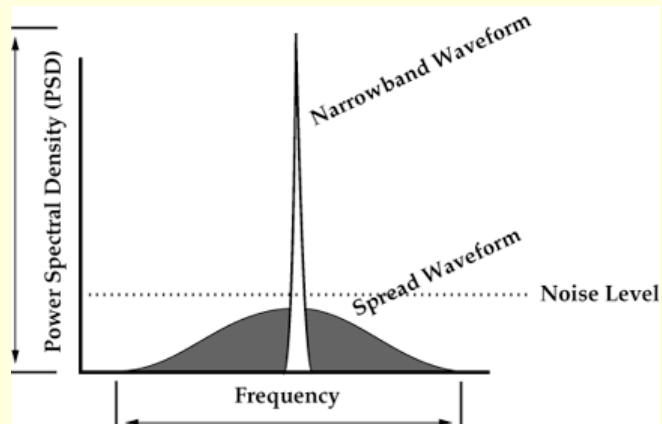


<http://www.ntia.doc.gov/osmhome/allochrt.html>

# FHSS - Freq Hoping Spread Spectrum



## DSS - Direct Sequence Spread Spectrum



<http://www.tapr.org/tapr/html/ss.qexss.html>

## 802.11a,b,g

- 802.11a,b,g are standards for wireless ethernet
- <http://www.linksys.com/edu/wirelessstandards.asp>

## UltraWide Band

- Very Very Very Wide Band Spread Spectrum that is pulse based

## Interference Issues

- Its all about interference.
- The technology is the limiting factor on interference concerns.
- Tragedy of the Commons
  - Economists are familiar with “the tragedy of the commons” - the idea that a scarce resource will be inefficiently over-exploited (as in the case of over-fishing, etc). For sceptics, the same fate awaits the airwaves.
  - The “tragedy” lies in the technology, not the resource.

## Cell Phones

- 1G - Analog
- 2G - Digital / Text
- 3G - Broadband Data / VOIP