Homework

Networking

Due September 9, 2022

Submit via D2L. Only .pdf format.

Problem 1:

Determine the wavelength of high C (C_6 in Helmholtz notation) with a frequency of 1046.502 Hz in air, water, and steel.

Problem 2:

A particular coaxial cable has an attenuation rate of 0.072 decibels per 1 meter. (a) What is the attenuation for 200 m of this cable. (b) If a signal has strength 1mW, what is the signal strength after transmission through 200 m of this cable.

Problem 3:

A line has a bandwidth of 2000 Hz. What is the minimum signal to noise ratio to transmit 50,000 bits per second?

Problem 4:

We use a geostationary satellite for communications. What is the round-trip delay? Assume that we are sending packets of 1KB (not 1Kb) information from one ground station to another. Our (bad) protocol sends a packet, then waits for the acknowledgment, then sends the next packet, etc. What is the bandwidth of this channel. Assume that it takes 10 nano-seconds to send out one bit of data.

Problem 5:

What is RFC 1149 and what is its current status?