ECE 440L

Last updated: 01/24/14

Lab 7 rubric

Overview

- 100 points possible
- Grade basis: Completeness, clarity, and correctness
- Assign partial credit when appropriate.

Problem	Item
1a	Plot is given proving that the sample rate is 1kHz.
1b	Anti-aliasing and reconstruction filters have correct BW.
2	Time AND frequency plots are given for:
	- 25-kHz carrier
	- 50-kHz carrier
3	Time AND frequency plots are given for:
	- PCM encoder (TTL) data
	- PCM NRZ data
	- BPSK channel
	- Output of demodulator multiplier
	- Output of demodulator filter
	- Output of PCM decoder
	- Output of reconstruction filter
	Explanations are given as to why the following plots make sense:
	- Frequency spectrum of PCM encoder (TTL) data
	- Frequency spectrum of BPSK channel (explaining both the shape AND location of the spectrum)
	- Time plot of the demodulator before *versus* after filter (compare and explain)
	- Time plot of PCM decoder output *versus* reconstruction filter output (compare and explain)

Problem	Item
4b	Time AND frequency plots are given for: BPSK channel.
	TA signs off that CD was demonstrated successfully.
5a	Report compares audio quality for 25-kHz versus 50-kHz carriers.
5b	Report compares audio quality for 7-bit linear versus 4-bit compander encoding.
7	Plots are given comparing (on the same time/freq scales):
	- BPSK input to the spreader (in time AND frequency domain)
	- Spread-Spectrum channel (in time AND frequency domain)
	Report compares spectra of BPSK and Spread-Spectrum signals.