ECE 440L
Last updated: 01/24/14

Lab 1 rubric

Overview

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

Problem	Item
1 (a)	Measurements of harmonics are recorded.
	THD calculation is shown, uses correct formula.
2 (a)	Measurements of spectrum, RMS of square wave are recorded.
	Measurements of spectrum, RMS of triangle wave are recorded.
	Results are compared with theory.
	Results match theory (Fourier series).
(b)	Student indicated how to set Fluke to get dBV.
	Calculations supporting this result are shown.
3 (a)	Graph of PSD is shown.
(b)	Unfiltered noise: BW is recorded.
	Unfiltered noise: RMS is calculated from PSD using correct procedure*.
	Unfiltered noise: RMS calculated from PSD is near RMS measured on Fluke.
(c), (d)	LPF noise: RMS is calculated from PSD using correct procedure*.
	LPF noise: RMS calculated from PSD is near RMS measured on Fluke.
	LPF noise with 2x BW: RMS is calculated from PSD using correct procedure*.
	LPF noise with 2x BW: RMS calculated from PSD is near RMS measured on Fluke.
	Student shows that doubling BW increases RMS by factor of sqrt(2).
(e)	BPF noise: PSD is recorded.
	BPF noise: RMS is recorded.
	Results are compared to pre-lab to some extent.
4 (a)	Signal RMS voltages are measured correctly.
	Noise RMS is calculated from PSD using correct procedure*.
	SNR calculation is shown, uses correct formula.
(b)	Observations about the effects of RBW and VBW are recorded.