Report 2 Guidelines
Spring 2004
ASE 369K Measurements and Instrumentation
Due date: Wednesday, April 21 before class

Report 2 will be an individual report that will be graded for English/format/style (8%) and technical content (22%). It will consist of the following sections only:

1. Abstract
2. Experimental Apparatus and Procedure (2 pages including schematic)
3. Theory (approx. 3 pages)
4. Results (approx. 6 pages including figures and Tables (~6 figures, 1 table))
5. Conclusions
6. References

Additional emphasis will be given on neatness of schematics and plots (i.e. you should not repeat the mistakes you made in your first report). Your entire report should be no more than 15 pages.

The Theory section should discuss:
- digital sampling parameters (e.g. sampling frequency, block size, sampling period, sampling interval and frequency resolution)
- leakage
- Fourier series components of sine, square and sawtooth waveforms
- Aliasing, Nyquist frequency

Build your Results section discussion around the following figures (you need to think about how you can give a logical description of important features of DSP. The list of figures is given only as a bare minimum; you can present them in any order you like):

1. Sine-wave periodic in sampling window (time domain plot & amplitude spectrum)
2. Sine-wave not periodic in window (time domain plot & amplitude spectrum)
   - Make sure you scale your axes properly to highlight the important features of the spectrum; i.e. For the spectra for (1) and (2), zoom in on the driving frequency peak
3. Amplitude spectrum for square wave
4. Amplitude spectrum for sawtooth wave
5. Spectrum for sine wave below Nyquist frequency
6. Spectrum for sine wave above Nyquist frequency

In your Results section, for the square and sawtooth waveforms, include and discuss a table that compares the measured amplitudes and frequencies of the harmonic coefficients of the Fourier series to the theoretical values.

Submit hardcopy to Dr. Idicheria, email to ase369k@mail.ae.utexas.edu