ECEN 4503
Random Signals and Noise
Spring 2002
Computer Project

Random Number Generators

This computer project is to simulate the use of computer assisted tool such as MATLAB in the analysis and design of random signals and noise. The goal is to design your own random number generator through literature search, qualitative analysis, computer design, and quality assessment. The procedure involves the following steps:

- Search literature (from various on-line sources available in library, such as IEL, ACM digital library, or UMI dissertation index) to identify a collection of papers with the methods and technique appropriate for the design of random number generator.
- Register your paper for approval during TA's office hours on first-come-first-take basis. No same paper or techniques can be used by more than two students.
- Realize your chosen technique in MATLAB or C and generate a sequence of 4096 data points of random number generator between –1 and +1, save them as a data file in ASCII format.
- Document a 5-10 pages report to
     Introduce the subject, random number generator
     Overview the techniques chosen
     Discuss the problem formulation
     Propose novel advancement or improvement
     Provide flowchart and simulation results
     List the references
- Send the source code and resulting data file and a how-to-run text file to explain how to run your code to TA's email (moayed@okstate.edu) for quality assessment.
- Turin in the report in hard copy by April 30, 2004.

Evaluation: The resulting random generator numbers will be evaluated by using those criteria presented in the Project Lecture, and the final grade of your project depends on the results of evaluation and your documentation. For your convenience, the quality assessment m-files will be made available in the class homepage for your convenience.