

Homework 5

Due on Monday 2nd December 2013

- (1) Implement a standard LFSR for the characteristic polynomial $f(x) = x^8 + x^7 + x^2 + 1$. Write the system of equations with the companion matrix for this LFSR. [5]
- (2) Compute the first eight patterns generated by the standard LFSR from (1) and an initialization of “00000001,” with the one in the least significant bit. [5]
- (3) Implement a modular LFSR for the characteristic polynomial $f(x) = x^3 + x + 1$. Write the system equations with the companion matrix for this LFSR. [5]
- (4) Compute the first eight patterns generated by the modular LFSR from (3) and an initialization of “001,” with the one in the least significant bit. [5]