

Xilinx SpartanIIE FPGA Implementation of Hutchison, Sunderland, and Madisetti Direct Digital Frequency Synthesizer (DDFS) Architectures

David C. Wilson

Advisor: Dr. David Hwang

ECE Scholarly Paper Presentation

November 19, 2008

4:00 P.M.

ECE Conference Room

George Mason University

Department of Electrical and Computer Engineering

Abstract:

The DDFS has many applications in satellite communications systems, medical imaging applications, RADAR, spread spectrum frequency hopping communication systems, and software radio applications. This paper discusses three DDFS architectures presented in papers written by B. H. Hutchison, David A. Sunderland, and Avanindra Madisetti. This paper also presents experimental data for the three DDFS architectures implemented and tested on a Xilinx SpartanIIE FPGA development board.