

FPGA based Programmable Sweep Generator for Plasma Experiments

Abstract

In this project student has to understand the FPGA Design flow and develop a SPI DAC (Serial peripheral interface Digital to Analog) driver in VHDL/Verilog on spartan-6 FPGA based board. Design and development of Programmable Sweep Generator for Plasma Experiments mainly consists of three parts – Hardware development in ISE 14.7, Software development in SDK from Xilinx and Host application development in LabVIEW/Python. Also he/she has to write a test bench for testing the functionality of the SPI DAC Driver before deploying it a spartan-6 based board. The GUI host application will allow the user to set different parameters for the Programmable Sweep Generator like Amplitude, Duty cycle, Offset etc. via Ethernet to UART interface.

Academic Project Requirements:

- 1) Required No. of student(s) for academic project: 2
- 2) Name of course with branch/discipline: B.E./B.Tech. Electronics and Instrumentation Engineering
- 3) Academic Project duration:
 - (a) Total academic project duration: 8 Weeks
 - (b) Student's presence at IPR for academic project work: 5 Full working Days per week

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