DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Name Of the Lab : DSP/VLSI Lab

OBJECTIVE:

- To perform basic signal processing operations such as Linear Convolution, Circular Convolution, Auto Correlation, Cross Correlation and Frequency analysis in MATLAB
- To implement FIR and IIR filters in MATLAB and DSP Processor and o study the architecture of DSP processor.
- Learn to communicate between two desktop computers & to implement the different protocols
- Be familiar with IP Configuration, with the various routing algorithms &r with simulation tools.
- To learn Hardware DescriptiveLanguage(Verilog/VHDL)& fundamental principles of VLSI circuit design in digital andanalog domain
- To familiarize fusing of logical modules onFPGAs& provide hands on design experience with professional design (EDA)platforms

OUTCOMES:

At the end of the course, the student should be able to:

- Carryout basic signal processing operations
- Demonstrate their abilities towards MATLAB based implementation of various DSP systems
- Analyze the architecture of a DSP Processor
- Design and Implement the FIR and IIR Filters in DSP Processor for performing filtering operation over real-time signals
- Design a DSP system for various applications of DSP Processor
- Communicate between two desktop computers
- Implement the different protocols and Program using sockets.
- Implement and compare the various routing algorithms andUse the simulation tool
- Write HDL code for basic as well as advanced digital integratedcircuit
- Import the logic modules into FPGABoards
- Synthesize Place and Route the digitalIPs
- Design, Simulate and Extract the layouts of Digital & Analog IC Blocks using EDA tools