BITS Pilani
Hyderabad Campus

Department of Electrical and Electronics Engineering

Digital Signal Processing Lab

Introduction

Digital signal processing (DSP) is the process of analyzing and modifying a signal to extract the desired information. It involves applying various mathematical and computational algorithms to analog or digital signals in order to produce a signal that's of higher quality than the original signal.

Scope of the Lab

Real world signals (usually in analog, continuous time form) are converted into digital and discrete data. Digital Signal Processing is performed on this digital data in order to extract useful information or modify the signal to a desired form. Digital Signal Processing is convenient due to the availability of computers to process and store the data.

Courses to cater

ECE F434 & EEE F434 Digital Signal Processing (Electronics and Communication, Electrical and Electronics)

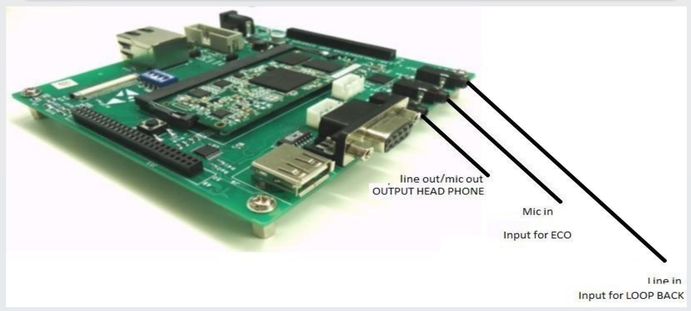
Software

- Code Composer Studio
- Matlab2020b

Hardware

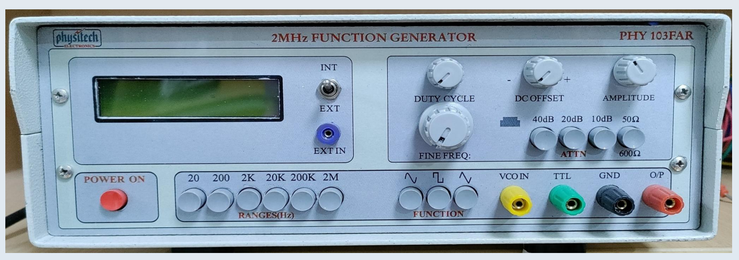
- TMS320C6748 DSK Lab Trainer kit
- DSO (Digital Storage Oscilloscope), 2 Channel-100MHz
- Function Generator 2MHz

Lab Equipment



TMS320C6748 DSP Trainer Kit

Digital Storage Oscilloscope



Function Generator - 2 MHz

Matlab2020b

Faculty Coordinator

- Prof. Subhendu Kumar Sahoo

Other Faculty Users

- Prof. BVVSN Prabhakar Rao
- Prof.Venkateswaran Rajagoplan
- Dr. Ramakant

Research Scholars

- Mr. Adepu Vivek
- Mr. Samit Kumar Ghosh
- Ms. Neha Parmar

Technician

- Mr. Ramesh P

List of experiments

- Getting started with Matlab
- Simple signal and image processing using matlab
- Getting startedwith Code Composer Studio
- Linear Convolution using Code Composer Studio
- Sine wave generation using TMS320C6748 DSK processor
- Getting started Simulink Using matlab
- Design an FIR filter Using FDA tool
- Half wave & full wave Rectifier using DSK kit
- FIR low pass filter
- IIR filter

Applications

- Signal Processing
- Image Processing
- Speech Signal Processing
- Digital Communication
- Analog to Digital converter
- Digital to Analog converter
- Data Compression

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