



# DIGITAL SIGNAL PROCESSING SIMULATION SOFTWARE TRAINER

MODEL - DSP100SW

This Software trainer provides Simulation of Information DSP in MATLAB.



## FEATURES

1. Study of the detailed theory of DSP .
2. Simulation of DSP in MATLAB.

**Note: - Matlab Software Version 7 or greater is required to this simulations.**

## SPECIFICATIONS

- |                                |   |                                      |
|--------------------------------|---|--------------------------------------|
| 1. DSP Simulation Software     | : | One                                  |
| 2. Matlab Simulation .m files  | : | more than 50 Files                   |
| 3. Books for DSP Lab           | : | 10 Nos in pdf Format                 |
| 4. Mp4 Video Class for DSP Lab | : | 40 Classes in Mp4 on DVD / Pen Drive |

**Sigma Trainers and Kits**  
E-113, Jai Ambe Nagar,  
Near Udgam School,  
Thaltej,  
**AHMEDABAD - 380054.**  
**INDIA.**

**Phone(O): +91-79-26852427/ 26850829**  
**Phone(F): +91-79-26767512/ 26767648**  
**Fax : +91-79-26840290/ 26840290**  
**Mobile : +91-9824001168**  
**Email : sales@sigmatrainers.com**  
**: sigmatrainers@sify.com**  
**Web : www.sigmatrainers.com**

**Dealer:-**

## EXPERIMENTS

1. Implement the sampling theorem and aliasing effects by sampling an analog signal with various sampling frequencies.
2. To study the properties of DFT. Write programs to confirm all DFT properties.
3. To study the circular convolution for calculation of linear convolution and aliasing effect. Take two sequences of length 4. Write a program to find 4 point circular convolution and compare the result with 8 point circular convolution to study aliasing in time domain.
4. (a) To find Z and inverse Z transform and pole zero plot of Z-transfer function.  
(b) To solve the difference equation and find the system response using Z transform.
5. To plot the poles and zeros of a transfer function when the coefficients of the transfer function are given, study stability of different transfer functions.
6. To study the effect of different windows on FIR filter response. Pass the filter coefficients designed in experiment 6 via different windows and see the effect on the filter response.
7. Design Butterworth filter using Bilinear transformation method for LPF and write a program to draw the frequency response of the filter.
8. To plot the mapping function used in bilinear transformation method of IIR filter design. (assignment may be given)
9. Effect of coefficient quantization on the impulse response of the filter using direct form I and II realization and cascade realization. (theory assignment)
10. Design and implement two stage sampling rate converter.
11. Computation of DCT and IDCT of a discrete time signal and comment on energy compaction density.