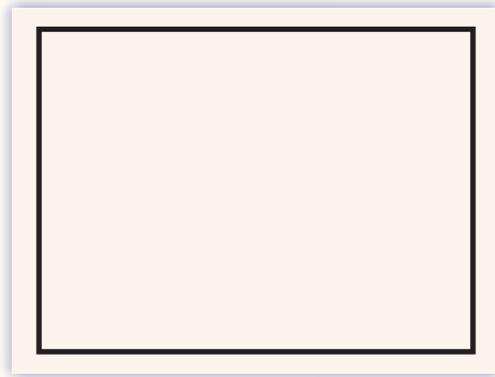




# DIGITAL SIGNAL PROCESSING (DSP) TRAINER

## MODEL-DSP100

This trainer has been designed with a view to provide practical and experimental knowledge of digital signal processing.



### SPECIFICATIONS

The 06713 DSK is a low-cost standalone development platform that enables users to evaluate and develop applications for the TI 067xx DSP family. The DSK also serves as a hardware reference design for the TMS32006713 DSP. Schematics, logic equations and application notes are available to ease hardware development and reduce time to market.

The DSK comes with a full complement of on-board devices that suit a wide variety of application environments.

#### Key features include:

1. A Instruments TM832006713 DSP operating at 225 MHz.
2. An AICZS stereo codec
3. 16 Mbytes of synchronous DRAM
4. 512 Kbytes of non-volatile Flash memory (256 Kbytes usable in default configuration)
5. 4 user accessible LEDs and DIP switches
6. Software board configuration through registers implemented in CPLD
7. Configurable boot options
8. Standard expansion connectors for daughter card use
9. JTAG emulation through on-board JTAG emulator with USB host interface or external emulator
10. Single voltage power supply (+5V)

In keeping view of SIGMA policy of continuous development and improvement, the Specifications may be changed without prior notice or obligation.

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Dealer:-

## EXPERIMENTS

1. Introduction to Code composer studio (CCS)
  - Linear and Circular convolution.
  - Low pass filter an audio signal input to DSK with FIR filter.
  - Low pass filter an audio signal input to DSK with IIR filter.
  - To generate sine wave using lookup table with table values generated within the programme.
2. Real time FIR/IIR filter incorporating pseudorandom noise as input, using TMS320C67x
3. Real-time adaptive filter for noise cancellation using TMS320C67x
4. Filtering a speech/audio signal to remove noise using TMS320C67x
5. Design a notch filter for removing powerline noise from ECG signal using TMS320C67x
6. Design a high pass filter for removing baseline wandere from ECG signal using TMS320C67x
7.
  - i. Matrix/vector multiplication using TMS320C67x
  - ii. Sine generation with 4 points using TMS320C67x
8.
  - i. Multiplication of two arrays using TMS320C67x
  - ii. Background for digital filtering using TMS320C67x
9. Data acquisition (Input) and Display (output) using TMS320C67x
10.
  - i. Eight-point complex FFT using C code
  - ii. Eight-point FFT with real-valued Input, using mixed C and TMS320C67x code
11. Adaptive filter for noise cancellation using C code
12. Discrete cosine transform (DCT) implementation on TMS320C67x