

**Product Name :**  
Delta / Adaptive Delta Modulation / Demodulation Trainer

**Product Code :**  
NLAB-ELECTRONICSAB160017



**Description :**

Delta / Adaptive Delta Modulation / Demodulation Trainer

**Technical Specification :**

Digital Communication Trainer System to under stand various digital Modulation and Demodulation Techniques. Various functional block diagrams are provided on-board for Teaching/Training. This Kits provides with various Test Points to visualize the signals on Oscilloscopes.

**FEATURES:**

On-board 250Hz, 500Hz,1KHz, 2Khz Sine-wave generator.

Sampling rate of 8KHz, 16KHz, 32KHz, 64KHz.

On-board Compander & Expander.

On-board Gain integration setting.

On-board 4th order Butter-worth Low pass filter with cut off frequency of 3.4khz

In-Built Power Supply.

#### LIST OF EXPERIMENTS:

Study of delta modulation and delta demodulation.

Study of Slope Overload and Increased Integration Gain in Delta Modulation.

Study of Adaptive Delta modulation and CVSD.

Study of companding systems.

Study Voice modulation and Demodulation (Delta) OPTIONAL.

Study Voice modulation and Demodulation (CVSD) OPTIONAL.

Study Voice modulation and Demodulation (Companding) OPTIONAL

#### SPECIFICATIONS:

Sine Wave Generator - Provides Sine waveform output of 250Hz, 500Hz, 1 KHz, and 2 KHz

Amplitude of 0 - 4Vp-p

Amplitude adjustments possible.

Pulse Generator

Switch selectable sampling clock of 8KHz, 16KHz, 32 KHz, 64 KHz.

Crystal Controlled Pulse Generator.

On-board features

Unipolar to Bipolar, Integrator for Modulation & Demodulation.

CVSD Modulator and demodulator

Input and Output buffer are provided.

2nd order Butter-worth Low pass filter with cut off frequency of 3.4 KHz.

4th order Butter-worth Low pass filter with cut off frequency of 3.4 KHz

Compander and Expander are provided.

Block Description Screen printed on glassy epoxy PCB

Modulation Techniques

Adaptive /CVSD modulation & demodulation.

Interconnections

All interconnections are made using 2mm banana Patch cords

Test points are provided to analyze signals at various points.

All ICS are mounted on IC Sockets.

Bare board Tested Glass Epoxy SMOBC PCB is used.

In-Built Power Supply of +5V/1.5A,  $\pm 12\text{V}/250\text{mA}$  with Power ON indication.

Attractive enclosure.

Set of 2mm Patch cords for interconnections.

User's Manual with sample experiments programs.

315mm x 245mm x 105mm (L x W x H).

Weight 3 Kgs.

## Naugralabequipments

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