

## ACT-06

### Delta / Adaptive Delta Modulation & Demodulation Trainer Kit



**ACT-XX** is a Digital Communication Trainer System to understand various digital Modulation and Demodulation Techniques. Various functional block diagrams are provided on-board for Teaching/Training. This Kit 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

#### 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.
- › 2<sup>nd</sup> order Butter-worth Low pass filter with cut off frequency of 3.4 KHz.
- › 4<sup>th</sup> 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

- › Delta modulation & demodulation
- › 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, ±12V/250mA with Power ON indication
- Attractive ABS Plastic enclosures.
- Set of 2mm Patch cords for interconnections
- User's Manual with sample experimental programs

#### 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**

Note : Specifications can be altered without notice in our constant efforts for improvement.