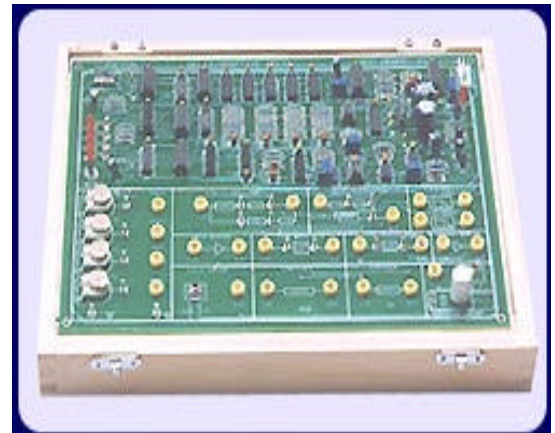


## TLD-07: DELTA, ADAPTIVE DELTA AND SIGMA DELTA MODULATION AND DEMODULATION

This module provides facilities to students for experimentation in the area of Delta Modulation techniques. It provides the students a facility to examine Delta, Adaptive Delta and Sigma Delta Modulation and Demodulation. An exhaustive manual has been provided with the system, which provides detailed experimental procedure and complete circuit diagram of the system.



### Features :

- Linear Delta Modulation and Demodulation
- Adaptive Delta Modulation and Demodulation
- CVSD Modulation & Demodulation
- Voice Communication using dynamic mic and speaker
- Compressor and Expander
- Selectable Four different Sampling frequencies.
- Four different on board sine wave generator.
- Facility for interfacing external signals
- 2nd and 4th order Low Pass Butterworth Filter
- Unipolar to Bipolar conversion on board
- Integrator Gain setting by variable pot
- Various test and monitoring points provided on-board.

### Technical Specifications :

- Modulation Techniques : Linear Delta Modulation Adaptive Delta Modulation and
- Sampling Frequency : 8KHz, 16KHz, 32 KHz, 64 KHz,
- Onboard SineWave : 250KHz, 500KHz, 1KHz, 2KHz
- Voice communication : using dynamic mic and speaker.
- Low Pass Filter Type : 2nd & 4th Order Butterworth Filter
- Cut-Off Frequency : 3.4 KHz
- Interconnection : 2mm standard banana socket
- Power Supply : +5V, +/-12V
- Cut-Off Frequency

### List of Experiments :

- Study of Delta Modulation and Demodulation
- Study of effect of slope overload and increased integrator gain in Delta Modulation
- Study of Adaptive Delta Modulation and Demodulation
- Study of Sigma Delta Modulation and Demodulation
- Study of Compressor and Expander
- Study of voice communication.