

**Sciencetech 2155 Delta Modulation & Demodulation Techniques** demonstrates the delta, adaptive delta and sigma delta modulation and demodulation schemes. It covers the concepts of slope overloading and its effects on signal. It also explains the concepts of removing slope overloading error by increasing clock frequency and using the technique of adaptive delta modulation.

### Features

- Transmitter and Receiver on same board
- Clock generation from crystal
- Switch selectable sampling rates
- Four on-board generators at 4 different frequencies (synchronized)
- Separate adjustable DC level
- Selectable integrator gain setting (by switch or control circuit)
- On board 4th order Butterworth low pass filter
- Unipolar to Bipolar converter on board
- Online Product Tutorials

### Scope of Learning

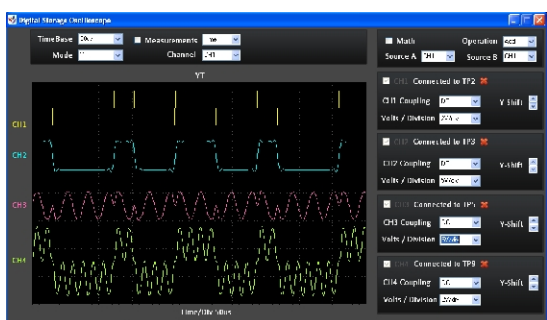
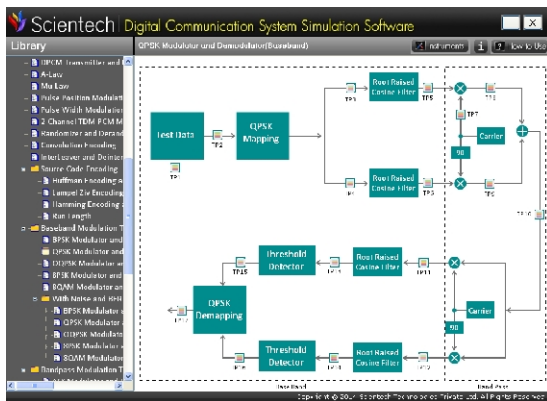
#### Study of:

- Delta Modulation and Demodulation
- Adaptive Delta Modulation and Demodulation
- Delta Sigma Modulation and Demodulation

## Technical Specifications

<b>Crystal Frequency</b>	: 6.400 MHz
<b>Sampling Clock Frequency</b>	: 50, 100, 200 & 400 KHz (Switchselectable)
<b>On board Generator</b>	: Synchronized Sine wave (1, 2, 3 and 4 KHz) with adjustable amplitude and Variable DC level +/-5V
<b>Integrator</b>	: Four integrator gain settings Normal, X 2, X 4, X 8
<b>Low Pass Filter</b>	: Fourth order Butterworth (Cut Off Frequency 4.8 KHz)
<b>Test Points</b>	: 45 nos.
<b>Interconnections</b>	: 2 mm socket
<b>Power Supply</b>	: 110-220 V $\pm$ 10%, 50/60 Hz
<b>Power Consumption</b>	: 4 VA approximately
<b>Dimensions (mm)</b>	: W 326 $\times$ D 252 $\times$ H 52
<b>Weight</b>	: 1 Kg approximately
<b>Product Tutorials</b>	: Online (Theory, procedure, reference results, etc).
<b>Included Accessories</b>	: 2mm Patch cords 16"-19 nos. Mains cord-1 no. Product Tutorial Online on <a href="http://www.scientechLearning.com">www.scientechLearning.com</a>

## Simtel 11 - Digital Communication Interactive Software (optional)



## Topics

- Source: Signal Source, Pulse Generator, Data Generator, Delay
- Math Operations: Adder, Subtractor, Multiplier
- Natural and Flattop Sampling
- Line Encoding and Decoding
- Delta Modulator and Demodulator
- Adaptive Modulator and Demodulator
- Sigma Delta Modulation and Demodulation
- PCM Transmitter and Receiver
- DPCM Transmitter and Receiver
- DPCM Transmitter and Receiver
- A-Law and MU-Law
- Pulse Position Modulation and Demodulation
- Pulse width Modulation and Demodulation
- 2-Channel TDM-PCM Multiplexer

For more details refer Simtel 11 Catalog