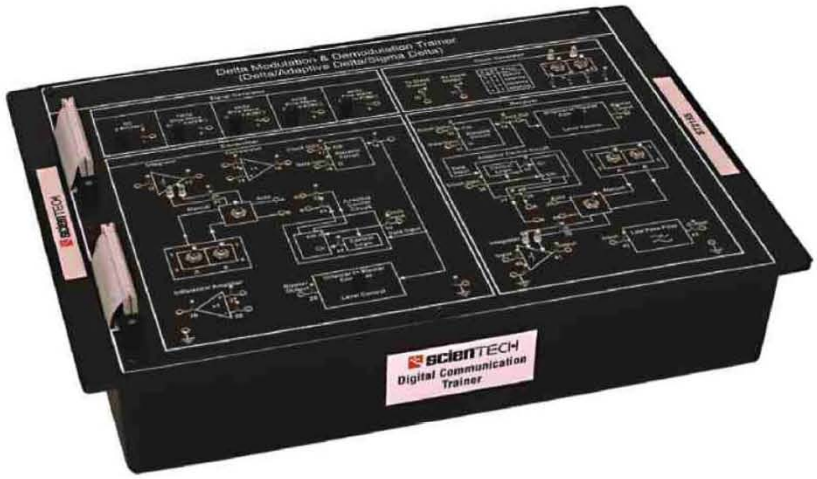
Delta, Adaptive Delta and Delta Sigma modulation /Demodulation Trainer

ST 2105



In digital communication specially operating at low frequencies or speech communications a saving in Bandwidth can be resulted using Delta Modulation and its associated techniques because this requires single encoding of sample. This Trainer covers Delta, Adaptive Delta and Delta sigma Modulation and Demodulation.

- 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

Technical Specifications

Crystal Frequency : 6.400 MHz

Sampling Clock Frequency : 50, 100, 200 & 400 KHz (Switch selectable)

On board Generator : Synchronized & Adjustable Amplitude Sine Wave Generator of 1 KHz, 2 KHz, 3 KHz, 4 KHz Separate Variable D.C. level

Integrator : Four integrator gain settings Normal, X 2, X 4, X 8

Low Pass Filter : Fourth order Butterworth (Cut Off Frequency 4.8 KHz)

Test Points : 43

Interconnections : 2 mm socket

Power Supply : 220 V ±10%, 50 Hz / 60 Hz on request

Power Consumption : 4 VA (approx.)

Dimensions (mm) : W 340 × D 240 × H 105

Weight : 1.1 Kg (approx.)

Experiments that can be performed

- A) Delta Modulation & Demodulation
  B) Effect of slope overload and increased integrator gain in Delta Modulation
- Adaptive Delta Modulation & Demodulation
- A) Delta Sigma Modulation & Demodulation
  B) Amplitude overload in Delta Sigma Modulation