



The trainer provides all necessary inputs and connections for students to study Pulse Amplitude Modulation/ Demodulation techniques. Time Division Multiplexing & Demultiplexing of Signals and Signal Reconstruction.

Technical Specifications

Crystal Frequency : 8 MHz

Analog Input Channels : 4

Multiplexing : Time Division Multiplexing

Modulation : Pulse Amplitude Modulation

On Board Analog Signal : 500 Hz, 1 KHz, 2 KHz and 4 KHz

(Sine wave synchronized to sampling pulse)

Adjustable amplitude and separate variable DC level)

Sampling Rate : Four sampling signals

4 KHz / 8 KHz / 10 KHz / 20 KHz per channel (switch selectable)

Sampling Pulse : With duty cycle variable from 0-90% in decade steps.

Clock Regeneration at Receiver : Using PLL

Test points : 50

Interconnections : 2 mm Sockets

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

Power Consumption : 4 VA (approx.)

Dimensions (mm) : W 340 \times D 240 \times H 105

Weight : 1.3 Kg (approx.)

- ▣ Crystal controlled clock
- ▣ On-board sine wave generator (synchronized)
- ▣ On-board pulse generator
- ▣ 4 Analog input channels sampled and time division multiplexed
- ▣ Four switch selectable sampling frequencies
- ▣ Pulse duty cycle selectable
- ▣ Internal/External sampling selectable 4 Channel De-multiplexer
- ▣ Generation of clock at receiver by PLL System
- ▣ 4th Order Butterworth L.P. filter

Experiments that can be performed

- Pulse Amplitude Modulation technique
- Time Division Multiplexing and Demultiplexing
- PLL as Frequency Multiplier to generate clock from sync signal
- 3 modes of operation to regenerate original signal
 - a) 3 connections between transmitter & receiver (Clock, sync & information)
 - b) 2 connections (information, sync) Clock regenerated at receiver
 - c) 1 connection (Information only) Clock and sync derived at receiver
- Effect of varying duty cycle of Sampling Pulse on signal reconstruction
- Effect of different sampling frequencies on TDM-PAM & Demod technique

