



40528 TDM-PAM Transmitter and Receiver is a communication system where the message signal is modulated using Pulse Amplitude Modulation and multiple access is provided using Time Division Multiplexing. The message information is encoded in the amplitude of a series of signal pulses and transmitted using Time Division Multiplexing (i.e. in different time slots).

The Trainer demonstrates following modes of operation between transmitter and receiver -

- Mode 1: 3 signals communication (Clock /Sync/ Modulated Signals)
- Mode 2: 2 signals communication (Sync/Modulated signals); Clock is recovered at receiver.
- Mode 3: 1 signal communication (Modulated signal); Clock and Sync are recovered at receiver

Features

- Crystal controlled clock
- On-board synchronized analog Signal Generator (DC and Sine wave)
- Demonstrates sampling and reconstructed as per Nyquist criterion
- Four switch selectable sampling frequencies
- Sampling pulse duty-cycle selectable
- On-board Pulse Generator
- Four analog input channels to demonstrate TDM-PAM
- Generation of clock at receiver by PLL
- Fourth order Butterworth Low Pass Filter

Experiments

1. Pulse Amplitude Modulation technique
2. Time Division Multiplexing and Demultiplexing
3. PLL as Frequency Multiplier to generate clock from sync signal
4. Three modes of operation between transmitter and receiver (3 signals/ 2 signals/ 1 signal communication)
5. Effect of varying duty cycle of sampling pulse on signal reconstruction
6. Effect of different sampling frequencies on TDM-PAM & demodulation technique

Technical Specifications

- Crystal Frequency : 8 MHZ
- Analog Input Channels : 4 channels
- 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 32, 40, 50 & 80 KHz/ channel (switch selectable)
- Sampling Pulse : With duty cycle variable from 0-90% in decade steps.

Note: Specifications are subject to change.

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- Clock Regen. at Receiver : Using PLL
- Test points : 55 nos.
- Interconnections : 2 mm Sockets
- Mains Supply : 110-220V, 50Hz/60 Hz
- Dimensions (mm) : W 326 x D 252 x H 52
- Weight : 2.5 Kg (approximately)
- Operating Conditions : 0-40°C, 85% RH

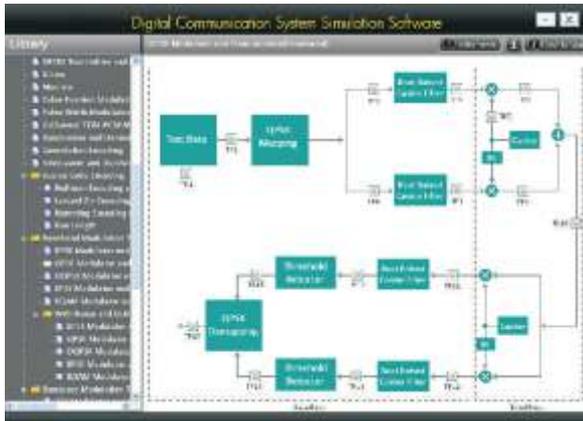
Included Accessories

- 2mm Patch cord 16" : 10 nos.
- Power cord : 1 no.

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



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