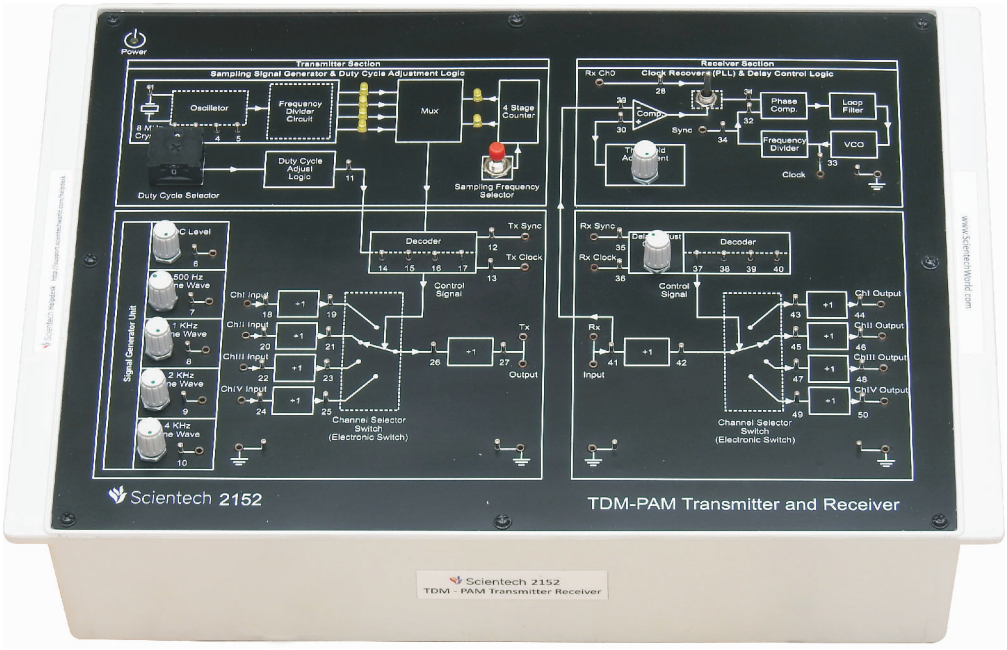
TDM - PAM Transmitter Receiver

Scientech 2152



TDM-PAM Transmitter and Receiver Scientech 2152 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

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Scope of Learning

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

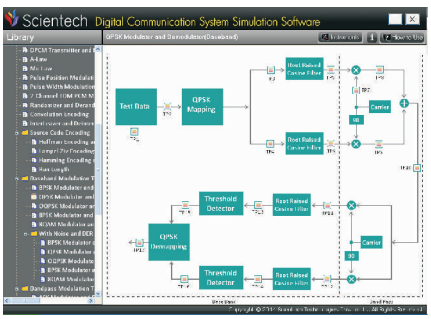
Technical Specifications

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.
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. Mains cord - 1 no.

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



For more details refer Simtel 11 Catalog

Subject to Change

Designed and Manufactured in India by -

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