

DCL - 03 TDM PULSE CODE MODULATION KIT



This kit provides two-channel Time Division Multiplexed Pulse Code Modulation in none, even, odd & hamming parity format. It enables students to learn the basics of timing synchronization between the transmitter and receiver. PCM receiver is a separate kit.

FEATURES :

- 2 channel TDM Pulse Code Modulation Transmitter kit.
- Real-time operation using fast mode or examination of data and control signal using LED's in slow mode.
- Parity selection : None, Even, Odd, Hamming.
- 4 Single Bit error option using switched fault mode.
- On-board Variable Sine Wave and DC Level generator.
- Various Test points provided on-board.
- Switch Faults.

TECHNICAL SPECIFICATIONS:

ON-BOARD SIGNALS:

Sine Wave:

Frequency : 500 Hz and 1 KHz.

Amplitude : 0 - 4 Vpp.

D.C. : 2 Nos.

Amplitude : 0 - 5 V

Clock Frequency : 240 KHz

Frame Frequency : 8 KHz

Input Channels : 2-Channel Time Division Multiplexed and Pulse Code Modulated.

Synchronization Signal : Pseudo-Random Bit Sequence Sync Code Generation.

Serial Data Pattern : 14 bit PRBS & 14 bit Data.

Parity Code Facility : Even, Odd, Hamming, None Parity.

Modes Of Operation : Fast : 16KHz / channel.

Slow : 0.088Hz (811ms) / channel.

Switch Faults : 8 Switch Faults are provided on board to study different effects on circuit.

Interconnection: 2 mm Banana Socket, 4 Pin Connector for Audio Input Kit

Test Points : 23 Nos. Test points are provided to observe various intermediate signals.

Power Supply : GND, +5V, +12V, -12V. (Dual output terminals)

LIST OF EXPERIMENTS:

- Principles of Pulse Code Modulation Techniques.
- Study of 2 Channel Time Division Multiplexing and Pulse Code Modulation.
- Study Principle of Analog to Digital Converter & Digital to Analog Converter.
- Study of Pseudo Random Bit Sequence Generation.
- Study of Error Control Coding Technique using ODD Parity, EVEN Parity and HAMMING Parity.
- Study of Synchronization Techniques :
 - Bit Synchronization.
 - Frame Synchronization.
- Effect of Switch Faults.
- Voice Communication (OPTIONAL).

ACCESSORIES:

Red Short Links	: 06 Nos.
Red Long Links	: 05 Nos.
Crocodile Links	: 02 Nos.
Experimental Manual	: 01 No.
Circuit Description Manual	: 01 No.
Power Supply Double Connector	: 01 No.

OPTIONAL :

AI/O Audio Input/Output kit

e-Manual Interactive Multimedia Software & Manual



FALCON