Experiment No: 04

Name of the Experiment: Design, Implementation, and performance testing of an PSK Digital Modulation circuit using a Trainer Board.

Objectives:

→ To design and implement a (PSK) Phase shift keying modulation circuit using trainer board.

→ To analyze and test the performance of the psk system.

→ To observe the output waveform.

Theory: Phase Shift keying (PSK) is a digital modulation technique where the phase of the carrier signal is based on digital data (0s and 1s). A communication type is BPSK where:

→ A '0' bit represents a "0° phase shift.

→ A '1' bit represents a 180° phase shift.

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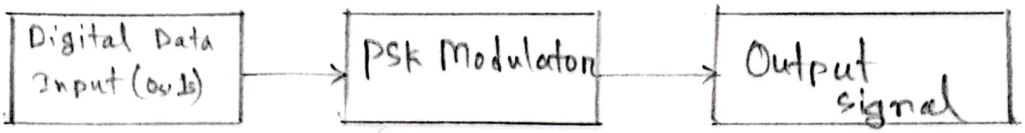
Block Diagram:



Apparatus:

(1) Digital trainer board
(2) Function generator
(3) Oscilloscope
(4) Power Supply
(5) PSK modulator circuit Module
(6) Connecting wires.

Circuit Diagram:

Procedure:

(1) Setup the trainer Board.
(2) Generate carrier signal.
(3) Provide digital input (0s and 1s) from the trainer board
(4) Implement phase shift.
(5) Observe output.
(6) Compare with Theoretical waveforms.

Precautions:

→ Ensure proper power connections to avoid circuit ~~diagram~~ damage.
→ Avoid loose connections that may introduce noise.
→ Use an oscilloscope with correct time and voltage scaling.

Result:

→ The PSK modulated waveform was successfully observed on the oscilloscope.