Indian Institute of Information Technology Allahabad
Department of Electronics and Communication Engineering

Course Name: **Digital Communication**

EXPERIMENT NO: 3

Objective/Aim – Study and analysis of pulse code modulation/demodulation technique (PCM) and interpret the modulated and demodulated waveforms for different sampling frequencies.
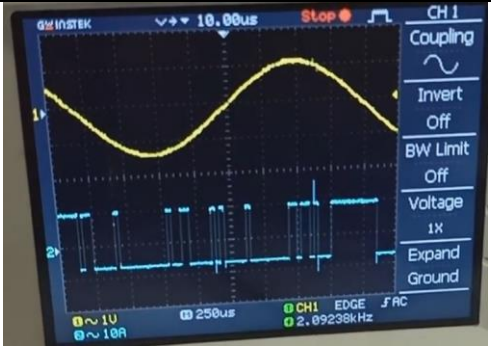
Setup requirement -

- ➢ TechBook Scientech 2802
- ➢ Power Supply
- ➢ DSO
- ➢ Test Probe

Theory - Pulse code modulation (PCM) is a digital scheme for transmitting analog data. The signals in PCM are binary; that is, there are only two possible states, represented by logic 1 (high) and logic 0 (low). In PCM, the sample & hold circuit periodically samples the analog input signal and converts those samples to a multilevel PAM signal. The ADC converts PAM samples to parallel PCM codes, which are converted to serial binary data in the parallel to serial digital pulses. At the receiver end, the DAC converts the parallel PCM codes to multilevel signals.

Block Diagram/ Circuit Diagram -
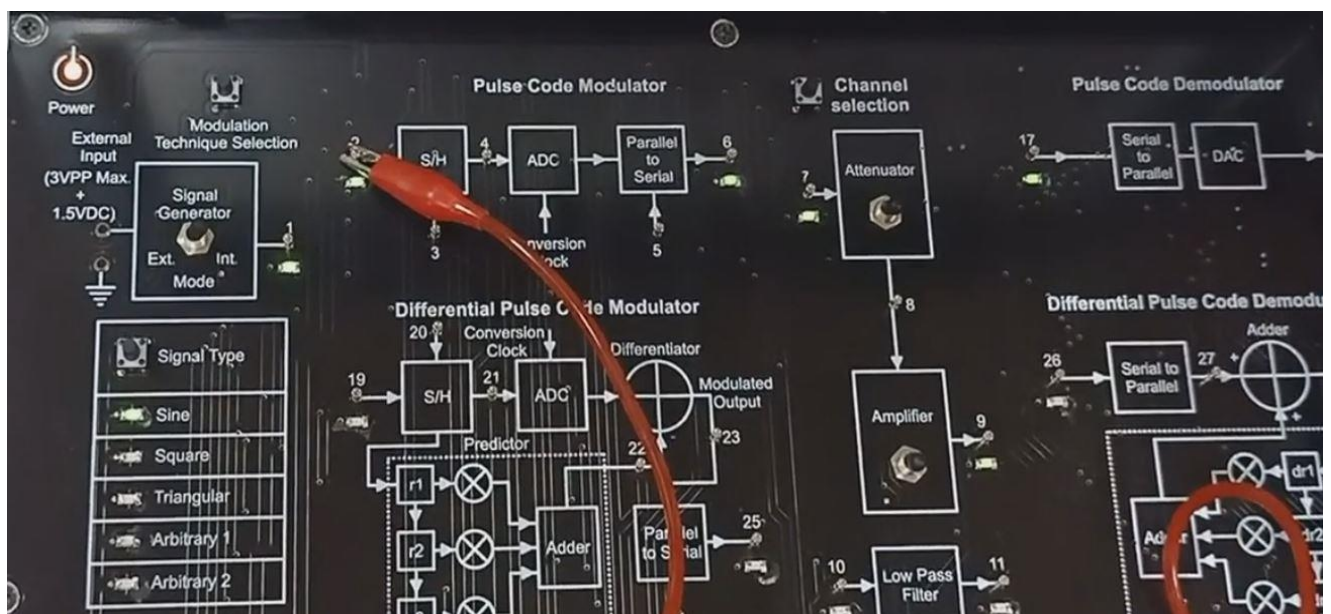
Observation tables -

Input signal frequency	Input Signal Type	Sampling frequency /line speed	Modulated Output	De-modulated Output
500 Hz	Sine	4KHz /32KHz		

Results -   Thus the Pulse Code modulation and demodulation were performed and graphs were plotted.

Precautions-   Connections should be verified before clicking the run button.