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

Course Name: **Digital Communication**

EXPERIMENT NO: 6

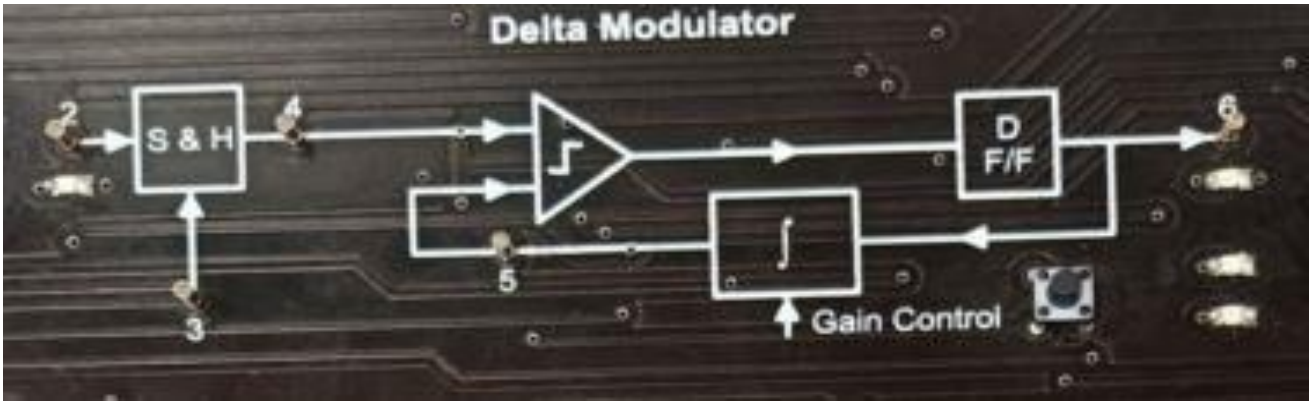
Objective/Aim – Study and analysis of the Delta modulator/demodulator.

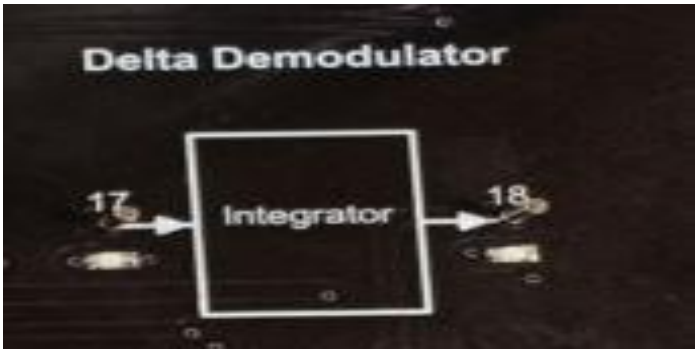
Setup requirement -

- TechBook Board 2803
- Power Supply
- DSO
- Test Probe

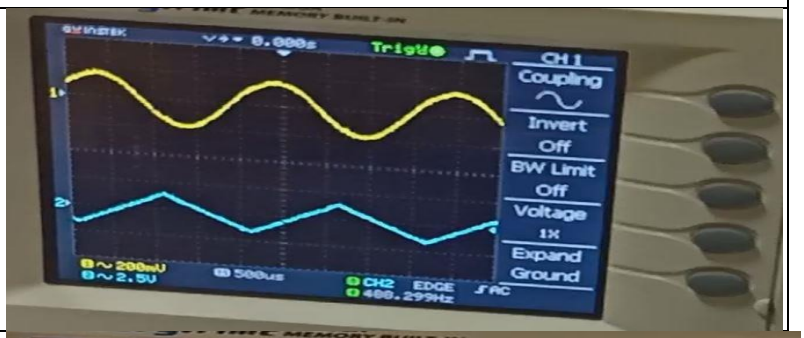
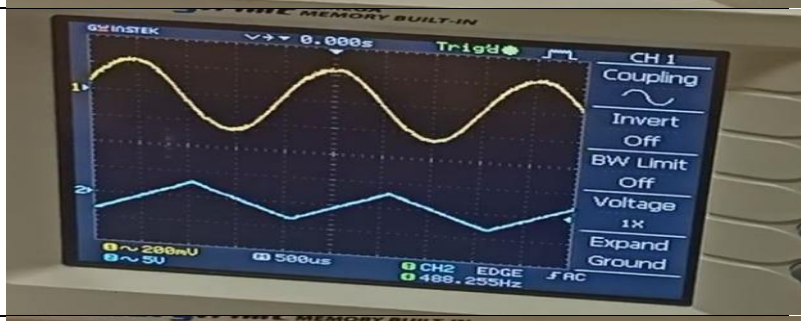
Theory – Delta modulator (DM) is an ADC and DAC technique used for transmission of voice information where quality is not of primary importance. DM is the simplest form of DPCM where the difference between successive samples is encoded into n-bit data stream. In DM, the transmitted data is reduced to a 1 –bit data stream. Moreover, delta modulator scheme generates two types of quantization errors; slope overload distortion and granular noise.

Block Diagram/ Circuit Diagram -





Observation table -

Input signal frequency	Sampling frequency (KHz)	Gain control	Modulated Output
Sine/500 Hz	64	1	
Sine/500 Hz	64	3	
Sine/500 Hz	128	1	
Sine/500 Hz	128	3	

Results - Thus the Delta modulation and demodulation were performed and graphs were plotted. These graphs are given in observation table.

Precautions-

1. Switch off the experimental kit during making connections.
2. Do not upload, delete or alter any software on the lab PC.
3. Use the DSO carefully.