

Indian Institute of Information Technology Allahabad

Department of Electronics and Communication Engineering

Course Name: Digital Communication

EXPERIMENT NO: 7

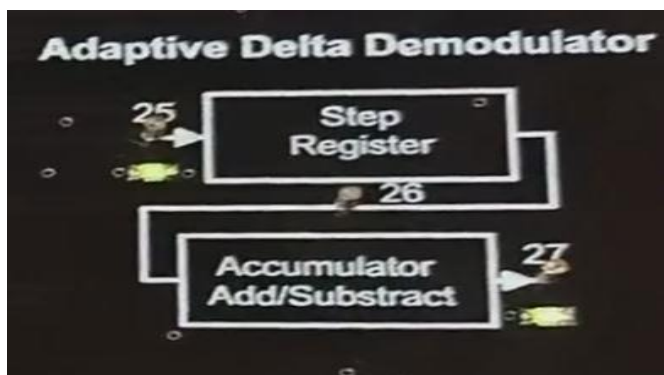
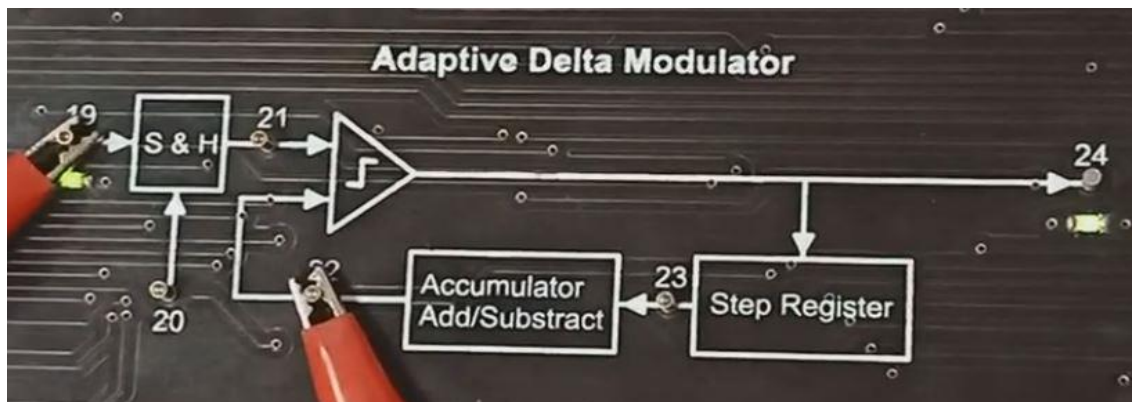
Objective/Aim – Study and analysis of the Adaptive Delta modulator/demodulator.

Setup requirement -

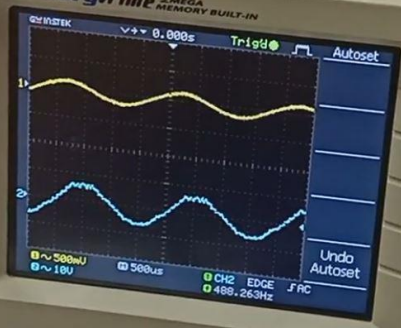

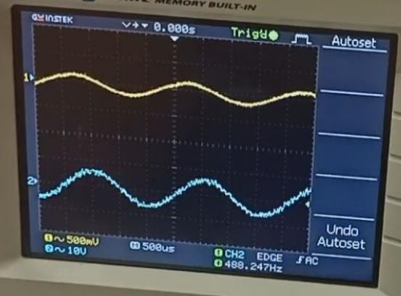
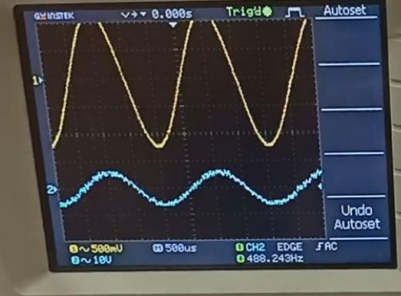
- TechBook Board 2803
- Power Supply
- DSO
- Test Probe

Theory – Delta modulation is an important modulation technique employed for data communication. Since, slope overload and granular noise are big problem in delta modulator, adaptive delta modulation became more important. In adaptive delta modulator, we optimize the step size in such a way that mean square value of the quantization error of delta modulator can be minimized.

Block Diagram/ Circuit Diagram -



Observation table -

Input signal frequency	Sampling frequency (KHz)	Modulated Output	De-modulated output
Sine/500 Hz	64		
Sine/500 Hz	128		

Results - Thus the Adaptive delta modulation and demodulation were performed with lower slope overload and granular noise as compared to delta modulation. Accordingly, graphs are plotted as 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.