## EXPERIMENT # 2 DPCM and DM

## **INTRODUCTION**

For the signals which do not change rapidly from one sample to next sample, the PCM scheme is not preferred, since encoding the highly correlated samples results in redundant information. In such cases **DPCM** would be better. By knowing the past behavior of point signal certain time, a up to а in it is possible to make some inference about the future values: the difference between successive samples is encoded into n-bit data streams. The encoder performs the function of differentiation; a quantizer precedes the differencing of adjacent quantized samples; the decoder is an accumulator, which if correctly initialized exactly recovers the quantized signal. **DM** is the simplest form of DPCM and it is used for transmission of voice information where quality is not of primary importance. In delta modulation, the transmitted data is reduced to a 1-bit data stream. Only the change of information is sent, that is, only an increase or decrease of the signal amplitude from the previous sample is sent whereas a no-change condition causes the modulated signal to remain at the same 0 or 1 state of the previous sample.

## **Laboratory Procedure**

- Set up the block diagram of DPCM as shown in Figure 1. Study the impact of the block parameters at different stages.
- Plot the output of the above circuit implementation as shown in the CRO's.





- Set up DM block as in Fig.2



Figure 2. DM

## **Report:**

- Explain the work of DPCM and DM system
- What is/are the difference(s) between PCM, DPCM and DM?