

Indian Institute of Information Technology Allahabad

Department of Electronics and Communication Engineering

Course Name: Digital Communication

EXPERIMENT NO: 4

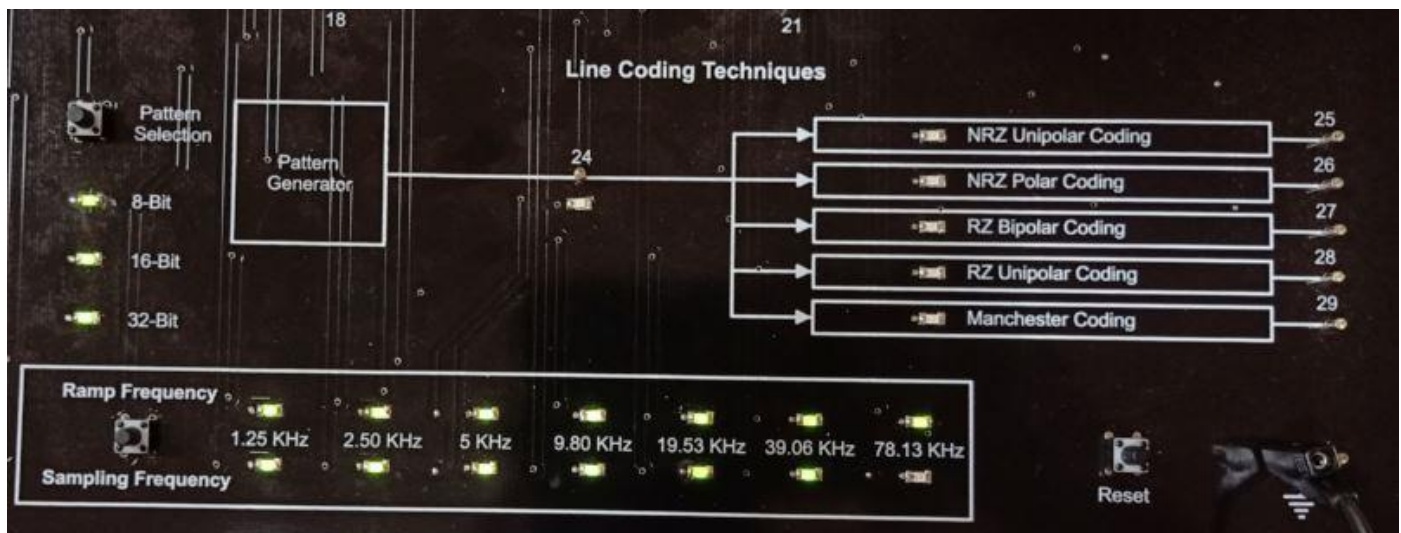
Objective/Aim – Study and learn about line coding techniques by generating the codes using the LINE-CODE encoder.

Setup requirement -

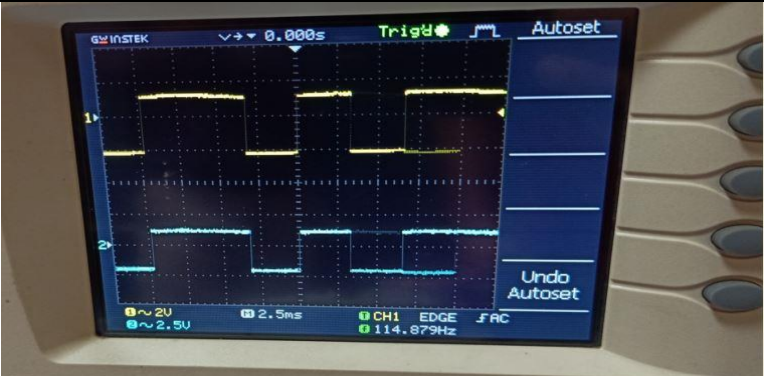
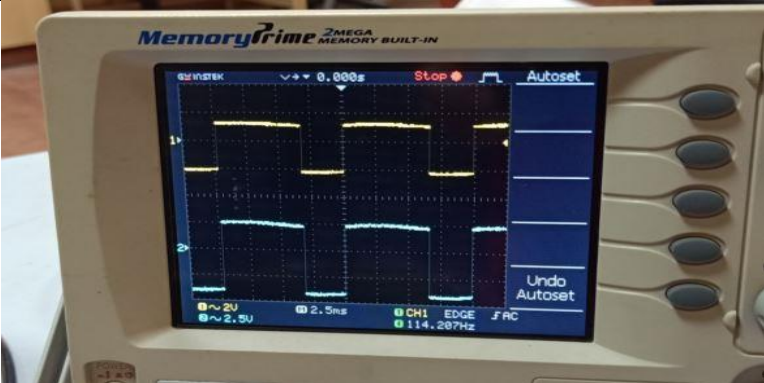
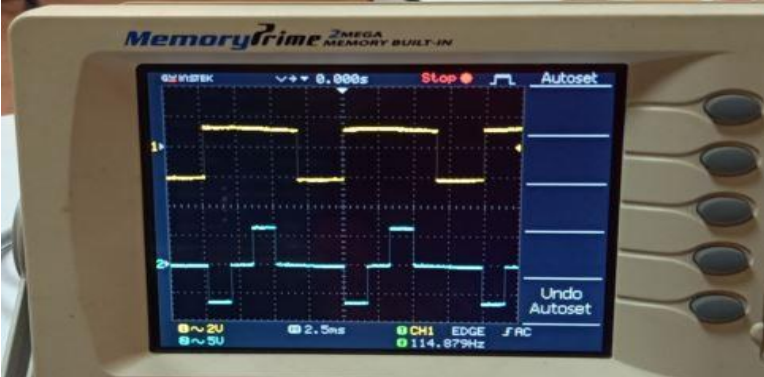
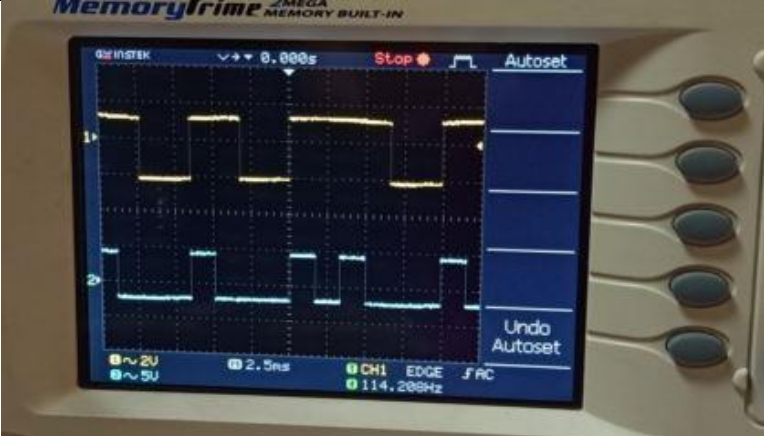
- TechBook Scientech 2801
- Power Supply
- DSO
- Test Probe

Theory - The line codes offers one or more of the following advantages as compared with PCM viz., DC component can be eliminated, Spectrum shaping and relocation without modulation or filtering, Bit clock recovery can be simplified, Error detection capabilities, and Bandwidth usage.

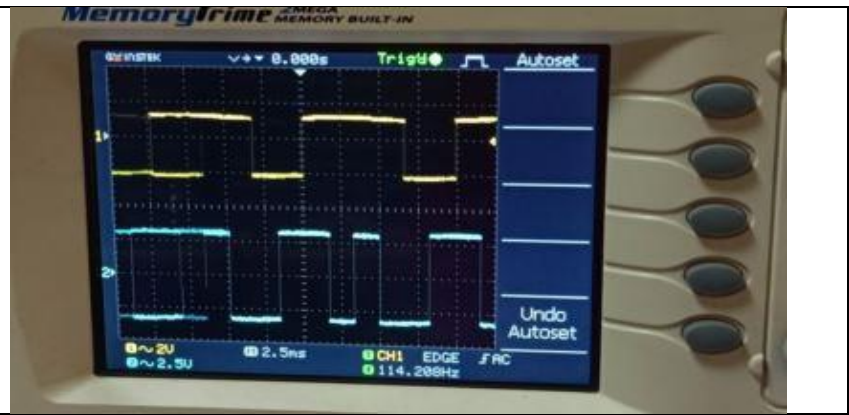
Block Diagram –



Observation tables -

Line code techniques	Output
NRZ Unipolar	
NRZ polar	
RZ bipolar	
RZ unipolar	

Manchester



Results - Thus the different line coding techniques have been performed and respected graphs are plotted in observation table.

Precautions-

1. Switch off the experimental kit during making connections.
2. Adjust the frequency of pulse trains and message signal carefully.
3. Use the DSO carefully.