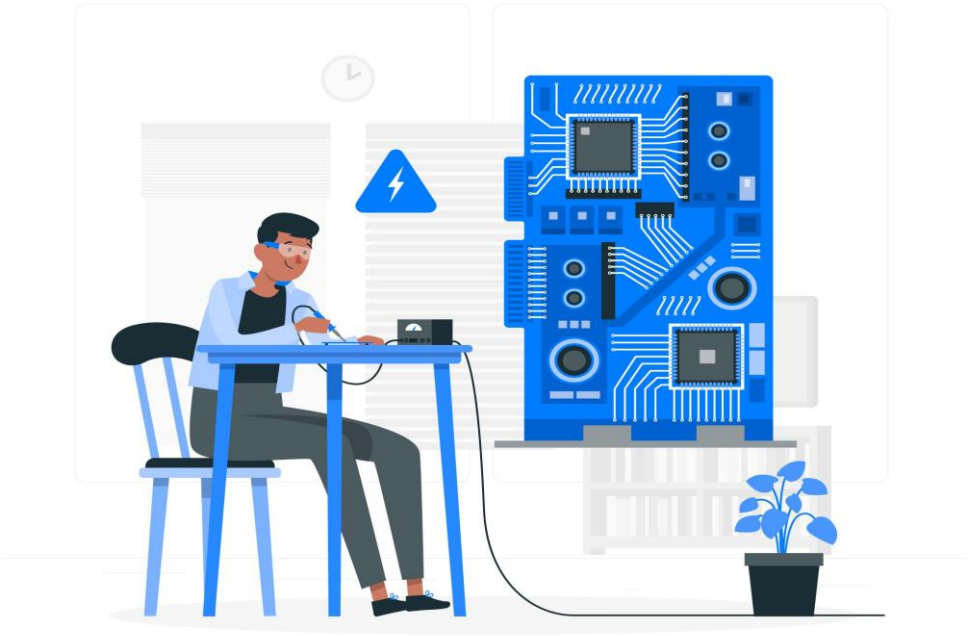


Lab 8

Akshar panchani- ID 202101522

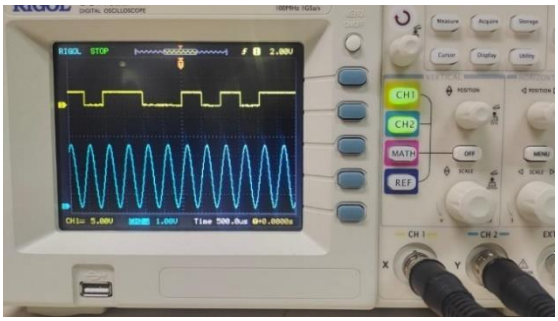
CT303 Digital Communication

11/19/23

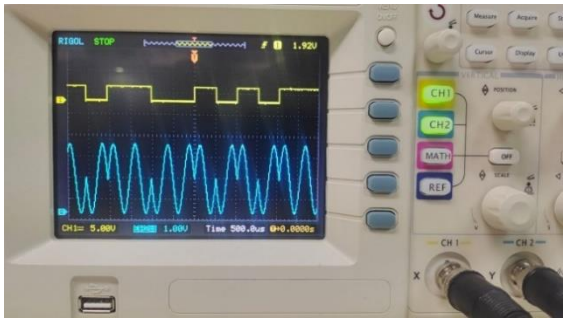
Experiment 1:

Input Data Type: 8-bit and 32-bit

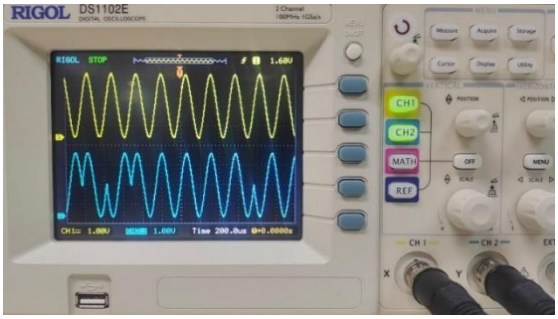
CH1: Input Data (TP10)
CH2: Carrier Signal (TP11)



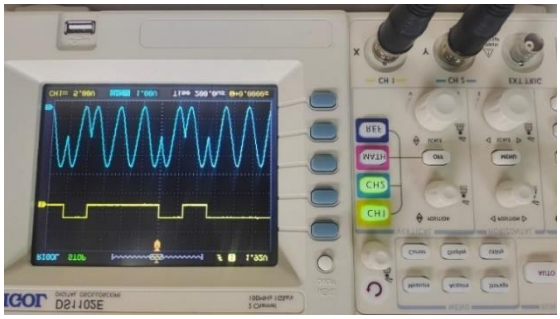
CH1: Input Data (TP10)
CH2: BPSK out (TP12)



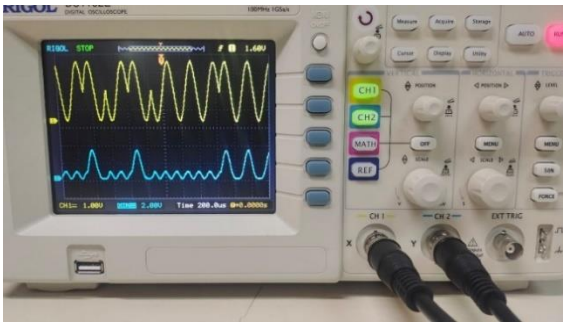
CH1: Carrier Signal (TP11)
CH2: BPSK out (TP12)



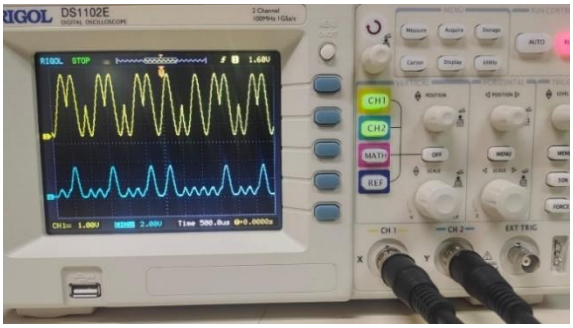
CH1: Input Data (TP10)
CH2: BPSK out (TP12)



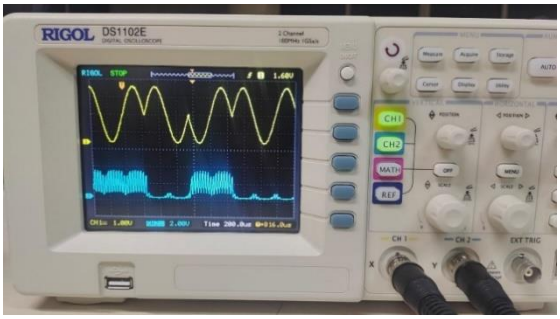
CH1: BPSK out (TP12)
CH2: Multiplier out (TP14)



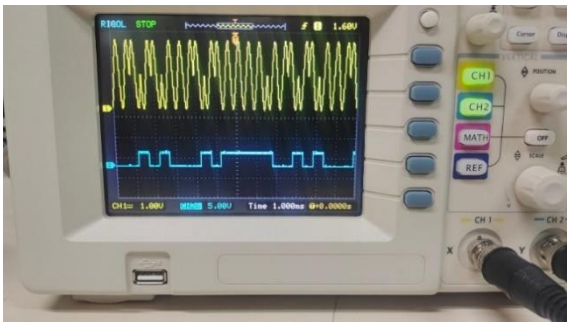
CH1: BPSK out (TP12)
CH2: Multiplier out (TP14)



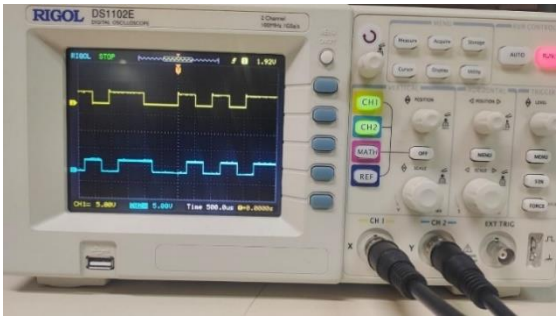
CH1: BPSK (TP12)
CH2:Integrator out (TP15)



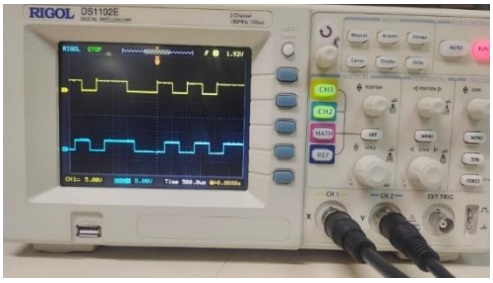
CH1: BPSK out (TP12)
CH2: Comparator Out (TP16)



CH1: Encoded input Data (TP10)
CH2: Comparator out (TP16)



CH1: BPSK out (TP12)
CH2: Integrator Out (TP15)

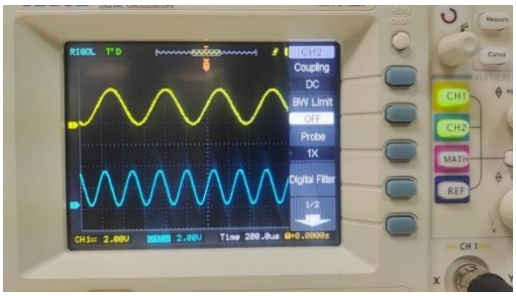


Experiment 2:

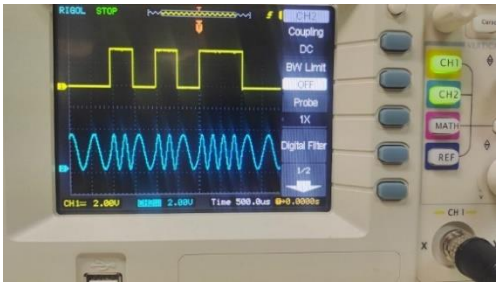
Input Data Type: 8-bit
Data clock Freq: 2KHz

CH1: Input Data (TP2)
CH2: Encoded Input Data (TP28)

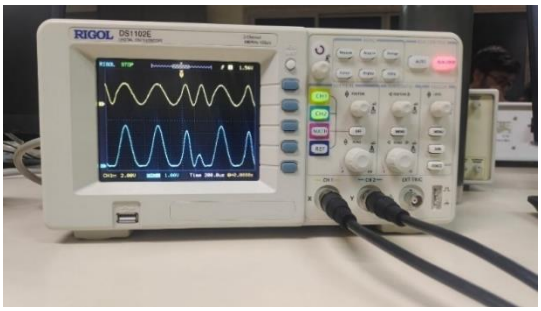
CH1: Carrier Signal F1 (TP30)
CH2: Carrier Signal F2 (TP29)



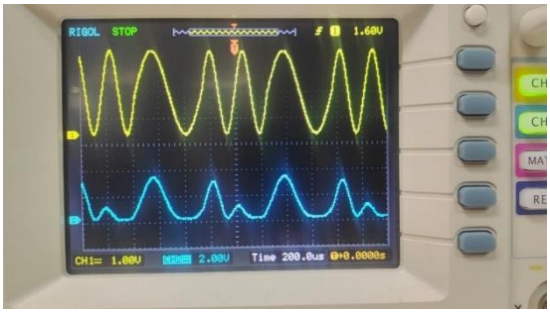
CH1: Encoded Input Data (TP28)
CH2: FSK Output (TP28)



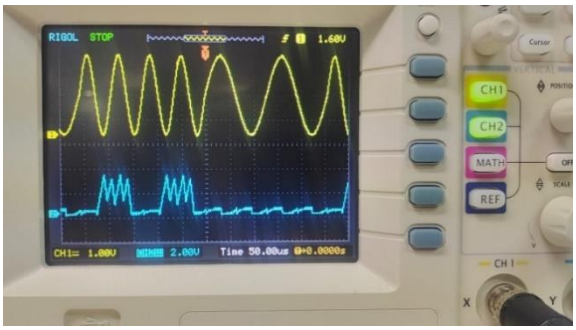
CH1: FSK output (TP31)
CH2:Multiplier Out (TP34)



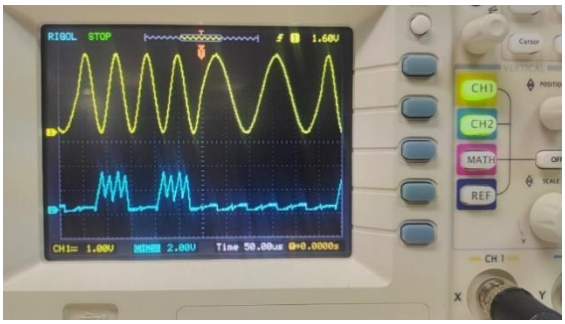
CH1: FSH output (TP31)
CH2: Multiplier out (TP35)



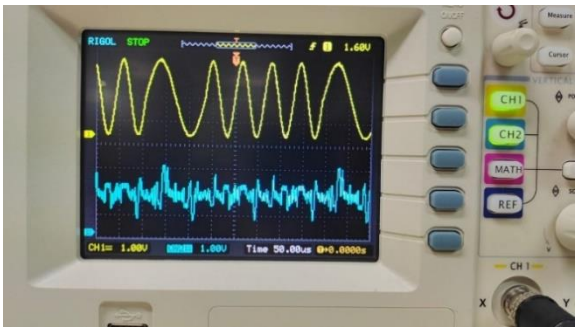
CH1: FSK output (TP31)
CH2: Integrator Out (TP36)



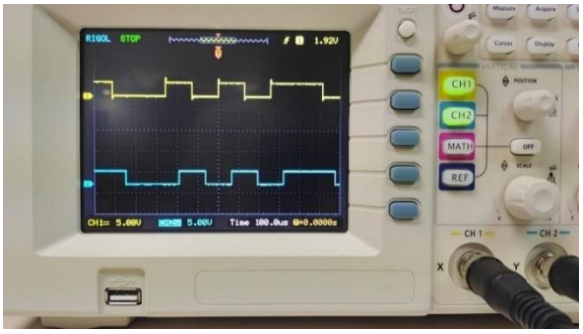
CH1: FSK Output (TP31)
CH2: Integrator out (TP37)



CH1: FSK Output (TP31)
CH2: Sigma Out (TP38)

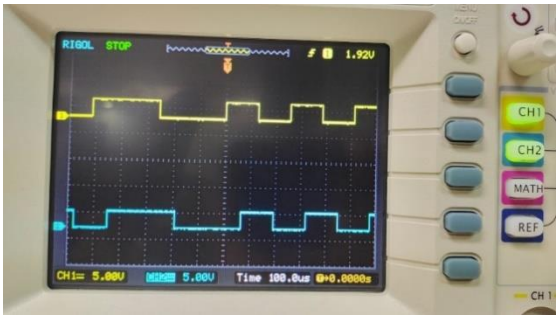


CH1: Input Data (TP28)
CH2: Comparator out (TP39)



CH1: Input Data (TP28)
CH2: Demodulator out (TP39)

CH1: Input Data (TP28)
CH2: Demodulator out (TP39)



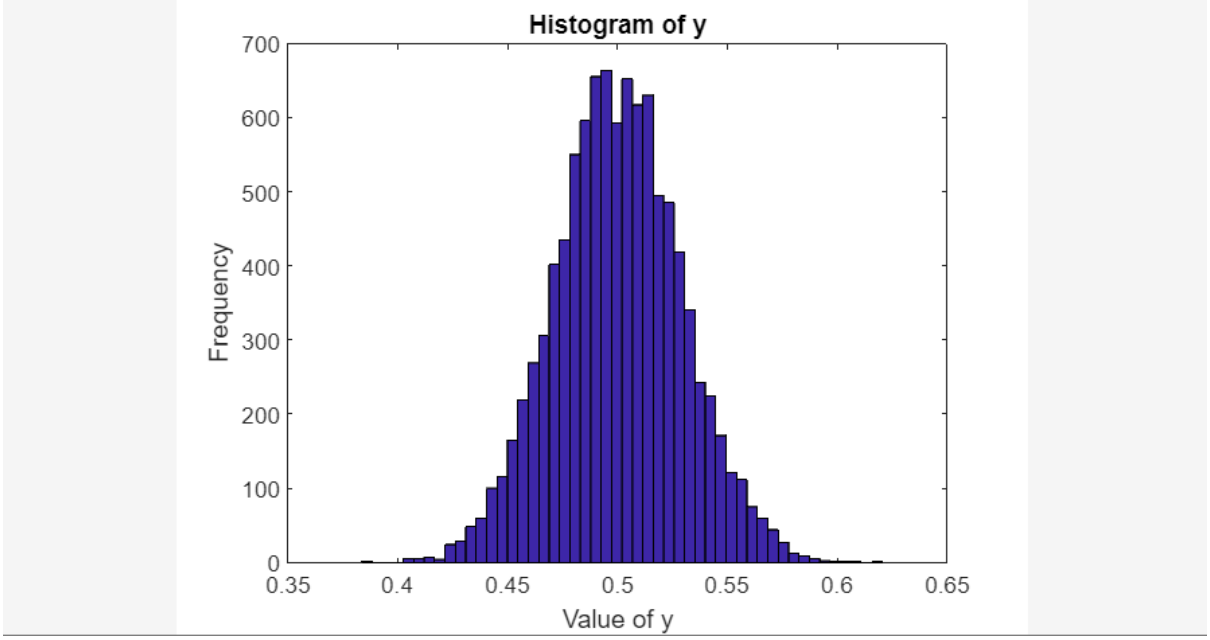
Experiment: 3:

```
n = 10^6;
x = rand(1, n);

m = 100;
y = mean(reshape(x, m, []));

bins = 50;
hist(y, bins);
```

```
title('Histogram of y');
xlabel('Value of y');
ylabel('Frequency');
```



It is evident that the histogram approximately follows a Gaussian distribution and resembles a bell-shaped curve. Consequently, the central limit theorem supports it.