Digital Communication Lab

Laboratory report submitted for the partial fulfillment
of the requirements for the degree of

Bachelor of Technology
in
Electronics and Communication Engineering

by

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Contents

Chapter *1*

Experiment - 09

1.1 AIM

1. Generation of PRBS Signal and recovery of the Clock.

1.2 Apparatus Used

1. ICs: 74LS121 Mono Stable Multivibrator	5. LM741 (Op - Amp)	9.LM393 (Voltage Comparator)
2.74LS04 NOT Gate	6. 74LS32 OR Gate	10. Connecting wires
3.DSO Probe	7. Breadboard	11. Capacitor
4. Digital Storage Oscilloscope	8.Function Generator	12.DC Power Supply

1.3 Theory

1.3.1 Circuit Diagram of PRBS Generator

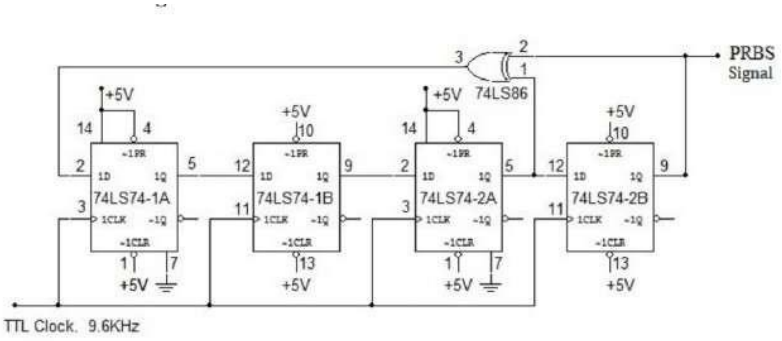


Figure 1: Circuit Diagram of PRBS Generator

1.3.2 Block Diagram of Clock Recovery

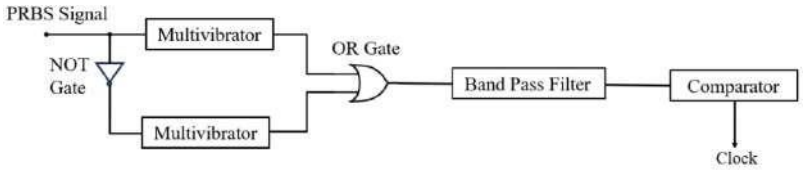


Figure 2: Block Diagram of Clock Recovery

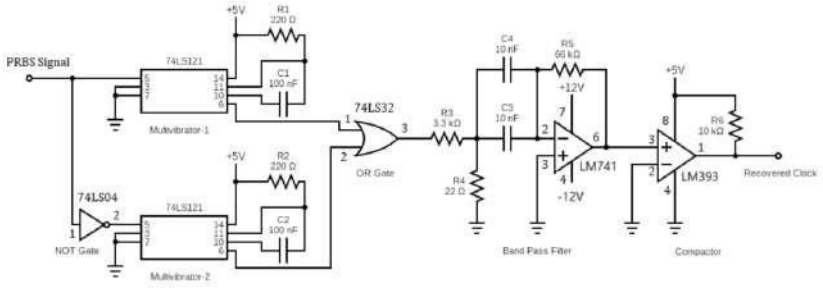
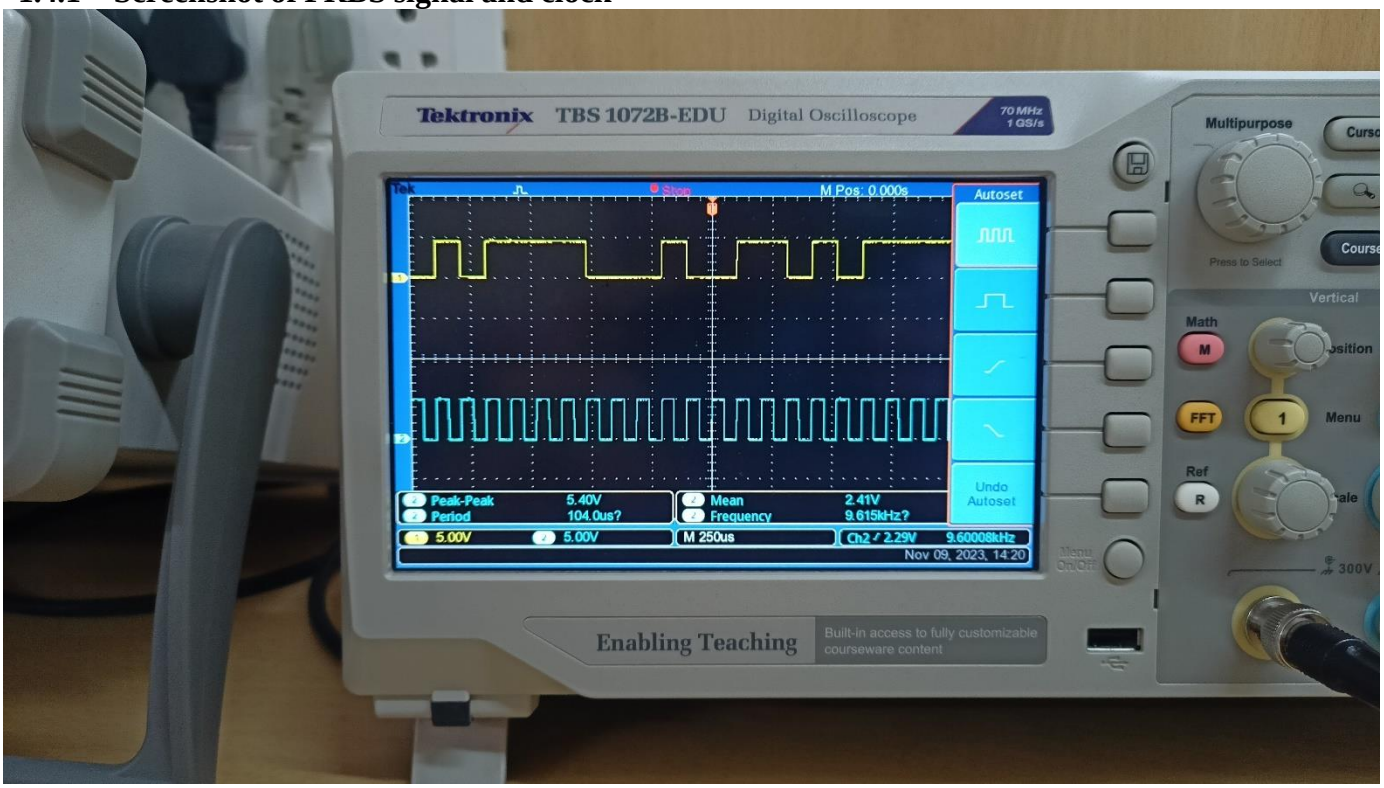


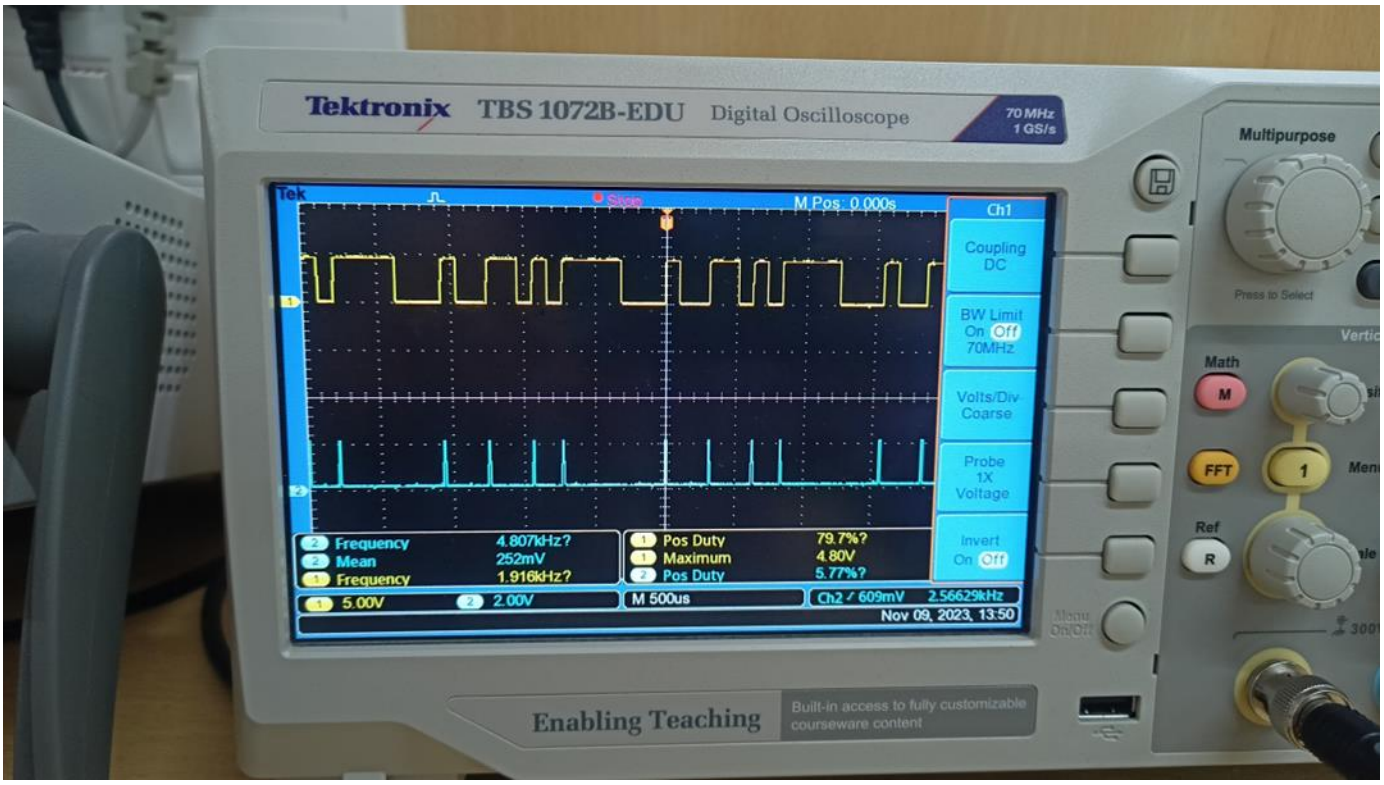
Figure 3: Circuit Diagram of Clock Recovery

1.4 Results

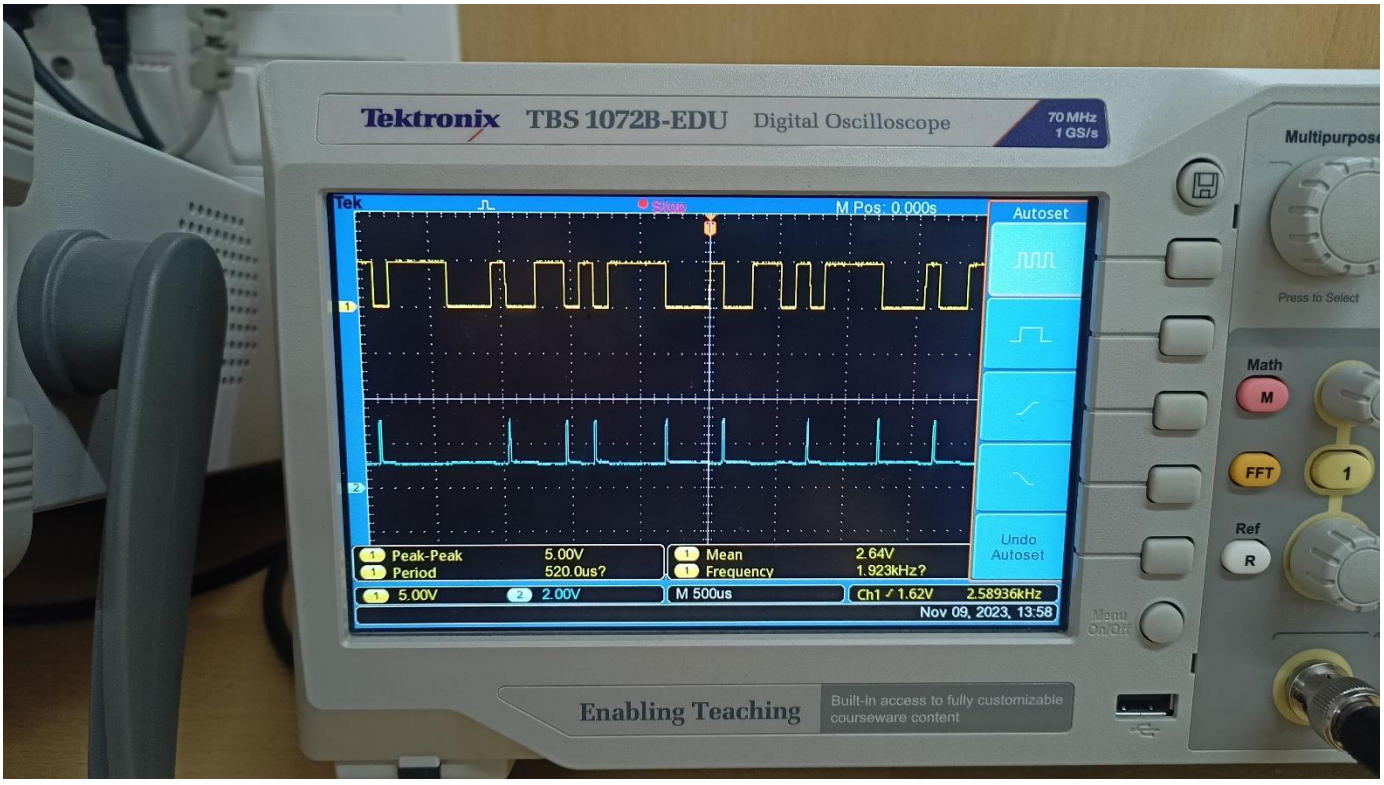
1.4.1 Screenshot of PRBS signal and clock



1.4.2 Screenshot of PRBS signal and Multivibrator-1

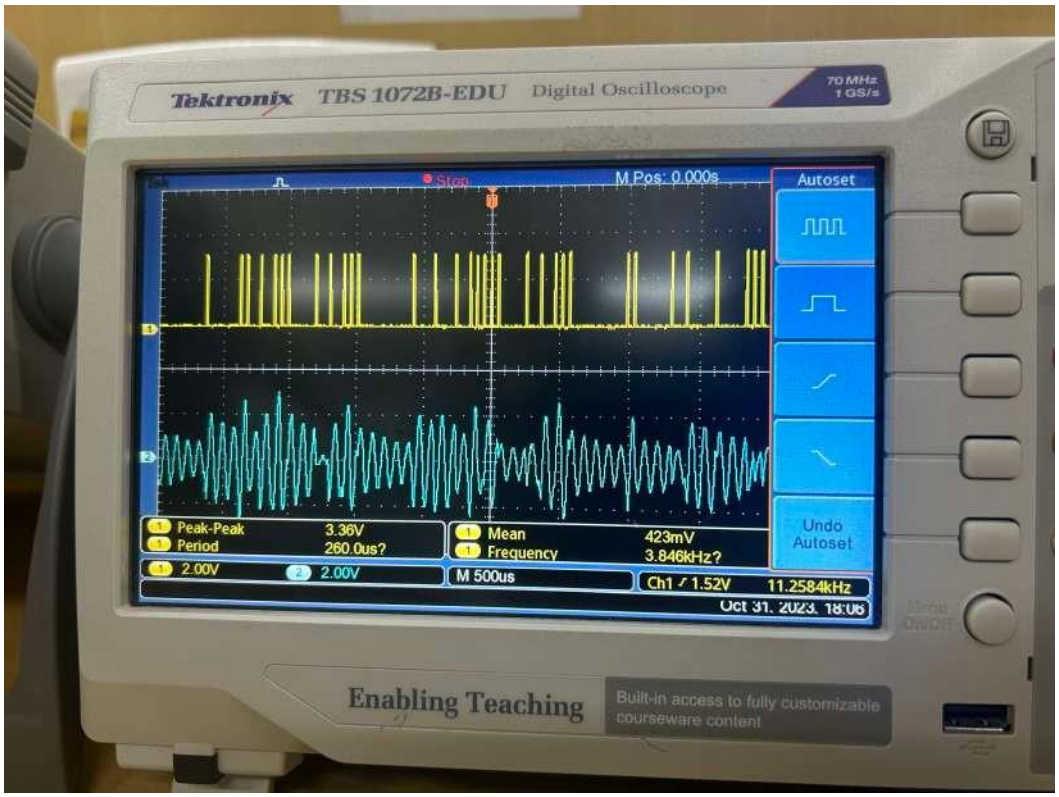


1.4.3 Screenshot of PRBS signal and Multivibrator-2

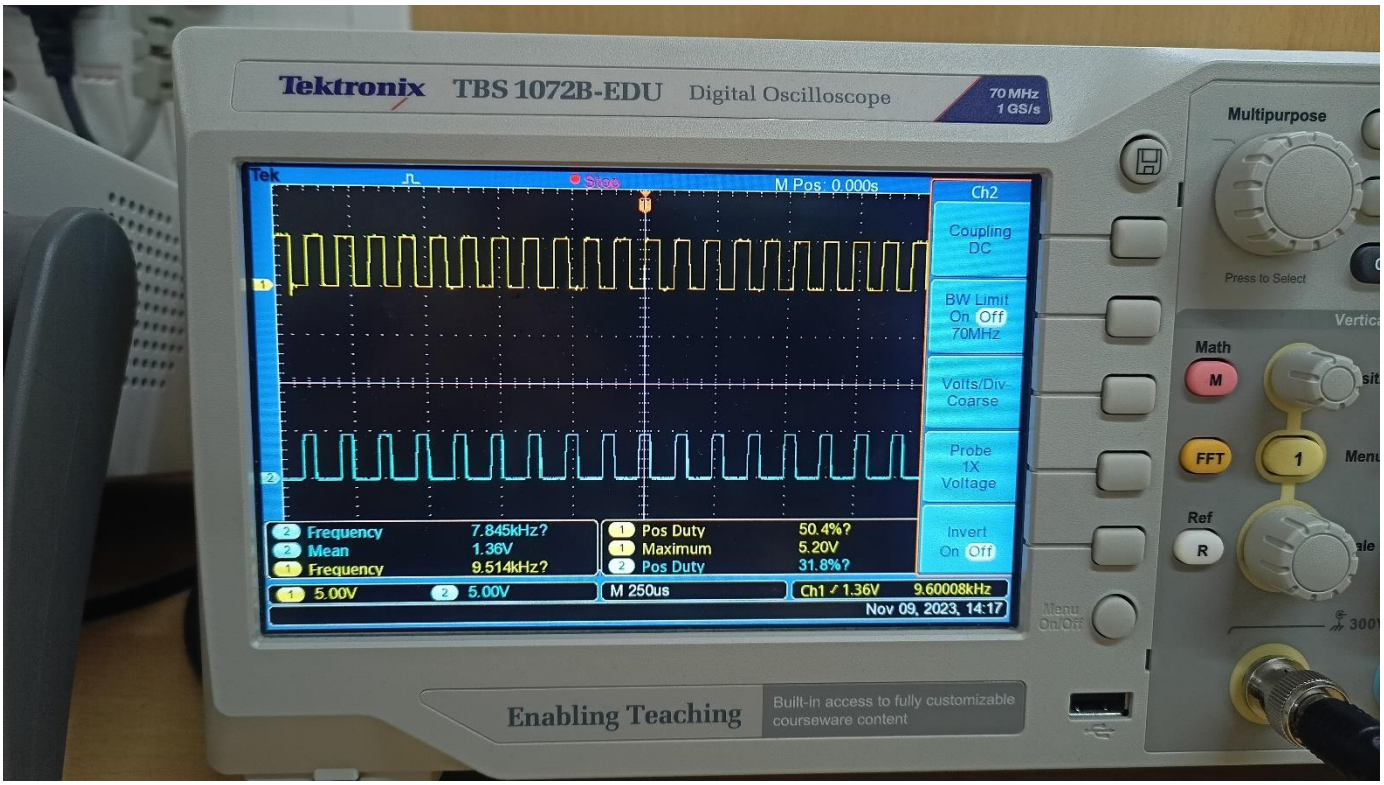


1.4.4 Screenshot of PRBS signal and OR gate output

1.4.5 Screenshot of OR gate and BPF output



1.4.6 Screenshot of recovered signal and clock signal



1.5 Conclusions

1. From this experiment we learnt how to generate PRBS signal.
2. We learnt about the clock recovery after generation of PRBS signal.

1.6 Precautions

1. Check the connections before switching on the kit.
2. Connections should be done properly.
3. Observation should be taken properly.