North South University

Department of Electrical & Computer Engineering

Lab Report

Experiment No:	03
Experiment Title:	Design a 2-bit Binary Multiplication Unit.
Course Code:	CSE332L
Section:	10
Course Name:	Computer Organization & Architecture Lab
Lab Group #:	03
Written By:	Rafia Ferdous Duti - 2131414
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Group Members ID:	Group Members Name:
2131077	Md Saadat Tariq
2131414	Rafia Ferdous Duti
2031004	Arshad Uzzaman Sarkar
2211424	Joy Kumar Ghosh
1921308	Kazi Sayera Binte Zaman

Objectives:

(1) To understand the behaviours of combinational multiplier

(2) To understand the theory and implement the multiplication unit

(3) To check multiplying bits and show the sum outputs.

Equipments:

- 7408 AND IC
- 7483 4-bit Adder IC
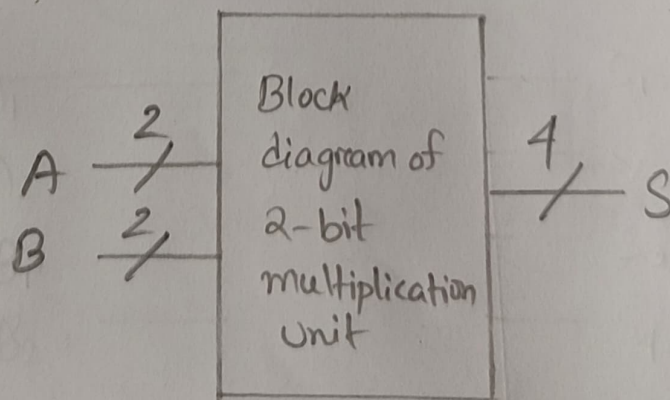- Trainer Board
- Wires

Block Diagram:

fig 3.1 : Block diagram of 2-bit multiplication unit

Truth table:

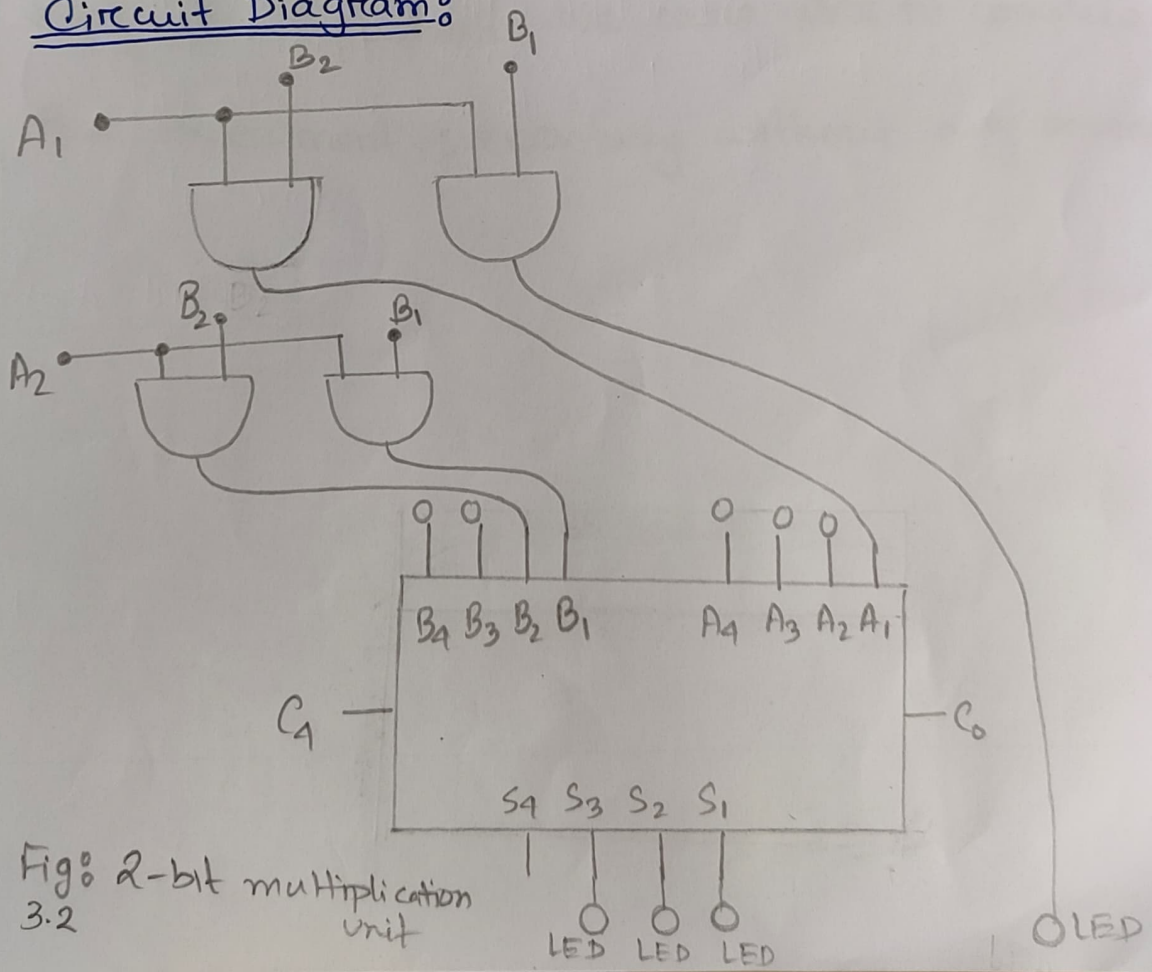| A_2	A_1	B_2	B_1	S_4	S_3	S_2	S_1
1	0	1	0	0	1	0	0
1	1	1	1	1	0	0	1
0	1	0	1	0	0	0	1
0	0	0	0	0	0	0	0

Circuit Diagram:

Fig: 2-bit multiplication unit
3.2

Discussion:

In this experiment, we were to design a combinational 4-bit multiplier but since 4-bit multiplier is a very complex circuit to build, we use did 2-bit multiplier. We needed an AND IC and an Adder IC to implement the circuit. We didn't face much difficulties while conducting the experiment as it was quite easy to implement. We were able to complete the experiment successfully without any errors.

A2 A1 B2 B1

S4 S3 S2 S1

4 bit Adder

Lab: 03
Group: 03

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