MULTIPLIER CIRCUIT

COMBINATIONAL LOGIC CIRCUITS

prepared by:

Gyro A. Madrona
Electronics Engineer

TOPIC OUTLINE

Multiplier Circuit

MULTIPLIER CIRCUIT

MULTIPLICATION

Decimal Multiplication

```
   8   Multiplicand
×  3   Multiplier
------
  24   Product
```

Binary Multiplication

```
    1000   Multiplicand
×   0011   Multiplier
-----------
    1000   Partial product 0
+  1000    Partial product 1
-----------
   11000   Product
```

EXERCISE

Create a block-level representation of a 2-bit binary multiplier.

Solution

EXERCISE

Synthesize a 2-bit parallel binary multiplier, and design a corresponding printed circuit board (PCB) layout for its implementation.

note

The use of XOR or XNOR gates is not allowed.

Solution

LABORATORY