Array Multiplier

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- Description: 4x4 Array Multiplier that multiplies two four-bit numbers
- Language: Verilog

How it works

This project uses a 4x4 Array Multiplier to multiplies two four-bit numbers together, using a series of full adders to result in an 8 bit product (figure 1). The multiplier works by systematically multiplying each bit of the first number with each bit of the second number. These partial products are then combined using a series of full adders to form the final result.

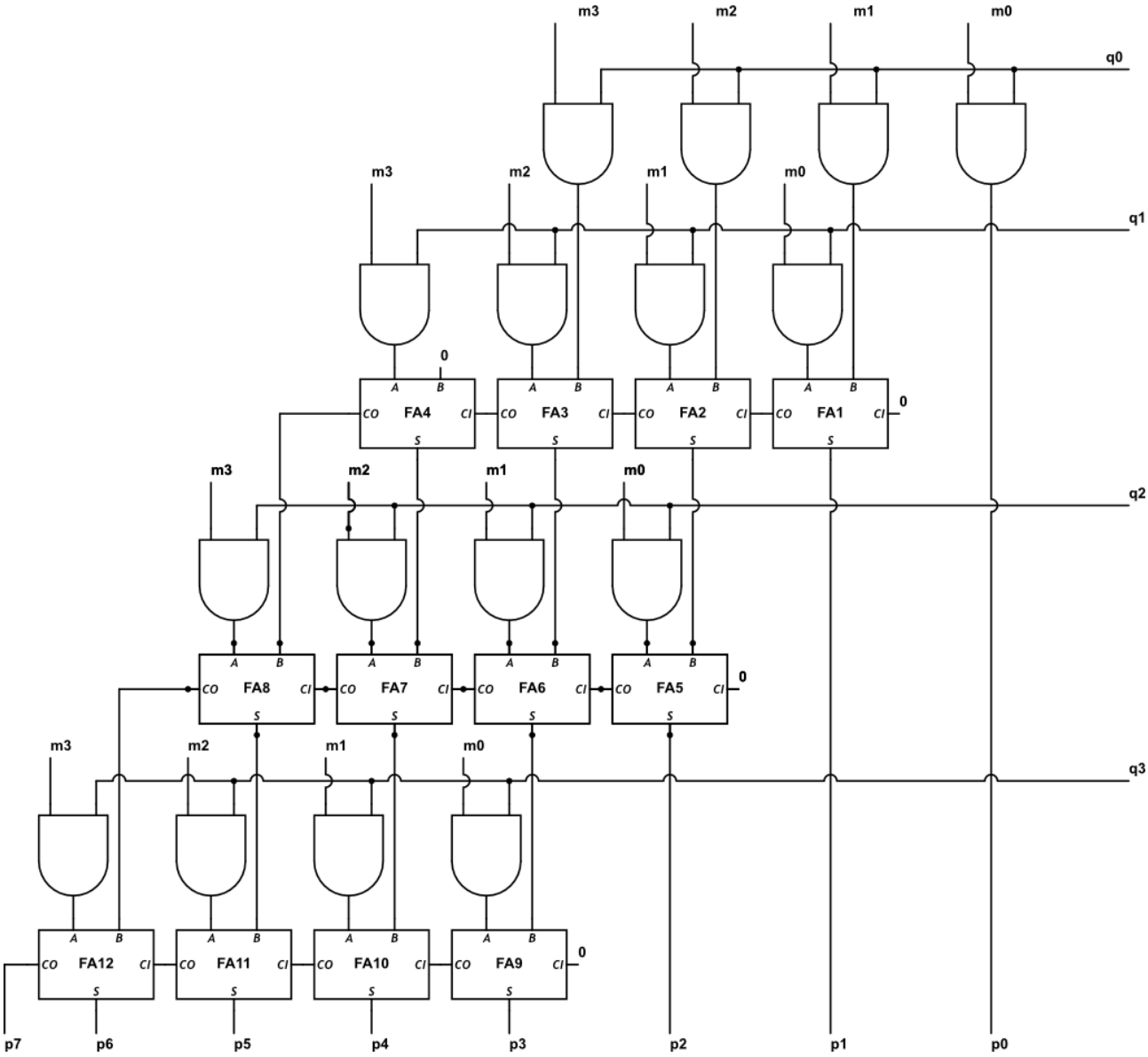

Figure 1: 4x4 Array Multiplier

How to test

Input two 4-bit binary numbers and manually verify the output. For example: 1st num: 1001 2nd num: 1011 Output: 1100011 (binary), or 0x63 (hexadecimal) The format of the output can be adjusted in test.py, but the value they represent should be accurate to the product of the two 4-bit binary numbers.

Pinout

#	Input	Output	Bidirectional
0	m[0]	p[0]	
1	m[1]	p[1]	
2	m[2]	p[2]	
3	m[3]	p[3]	
4	q[0]	p[4]	
5	q[1]	p[5]	
6	q[2]	p[6]	
7	q[3]	p[7]	