SYNTHESIS REPORT

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Speed of operation:

Booth multiplier:

Minimum period: 2.067ns (Maximum Frequency: 483.887MHz)
Minimum input arrival time before clock: 1.781ns
Maximum output required time after clock: 0.673ns
Maximum combinational path delay: No path found

Combinational multiplier:

Maximum combinational path delay: 13.183ns

Array multiplier:

Maximum combinational path delay: 10.292ns

Hardware requirement:

Booth multiplier:

# Adders/Subtractors	: 2	
6-bit adder	: 1	
6-bit subtractor	: 1	
# Counters	: 1	
3-bit up counter	: 1	
# Registers	: 14	
Flip-Flops	: 14	
# Comparators	: 1	
3-bit comparator greater		: 1
# Multiplexers	: 5	
6-bit 2-to-1 multiplexer	: 2	
7-bit 2-to-1 multiplexer	: 3	

Combinational multiplier:

# Adders/Subtractors		: 59
16-bit subtractor	: 1	
2-bit adder	: 8	
2-bit adder carry in	: 48	
8-bit subtractor	: 2	
# Multiplexers	: 3	
16-bit 2-to-1 multiplexer	: 1	
8-bit 2-to-1 multiplexer	: 2	
# Xors	: 1	
1-bit xor2	: 1	

Array Multiplier:

# Adders/Subtractors	: 56
2-bit adder	: 8
2-bit adder carry in	: 48

Conclusion: The speed of booth-multiplier is very less as compared to the other two also the hardware required by the booth multiplier is very much optimized. Array multiplier requires a lot of hardware and it will become very tedious to implement larger multiplications.