**Booth Multiplier**

Report of CA1

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Contents

[Controller Design 2](#_Toc38739588)

[State Machine 2](#_Toc38739589)

[Counter 2](#_Toc38739590)

# Controller Design

### State Machine

The state Machine of our controller can be seen in Figure 1.

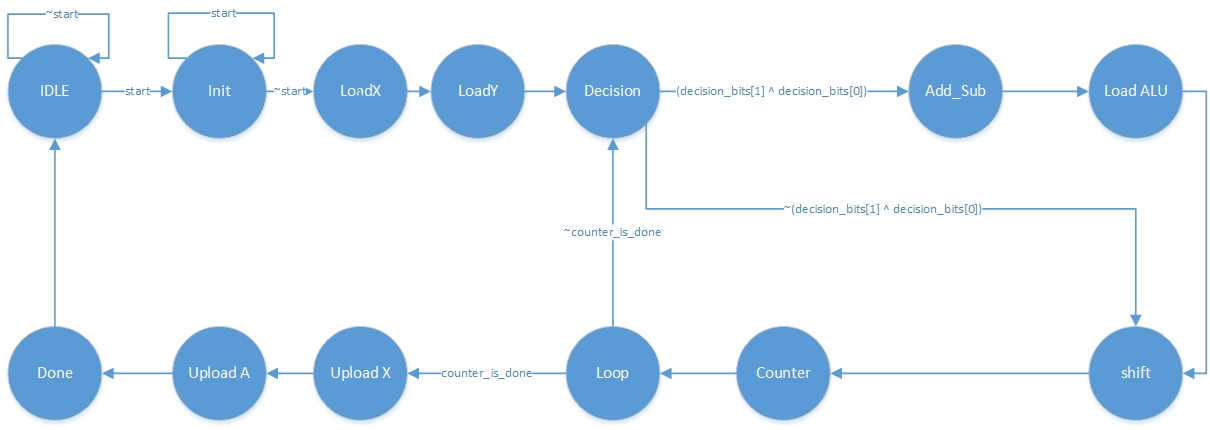


Figure 1

And All of Controller Signals Shown in Figure 2 and also we show that what happens to these signals in each state

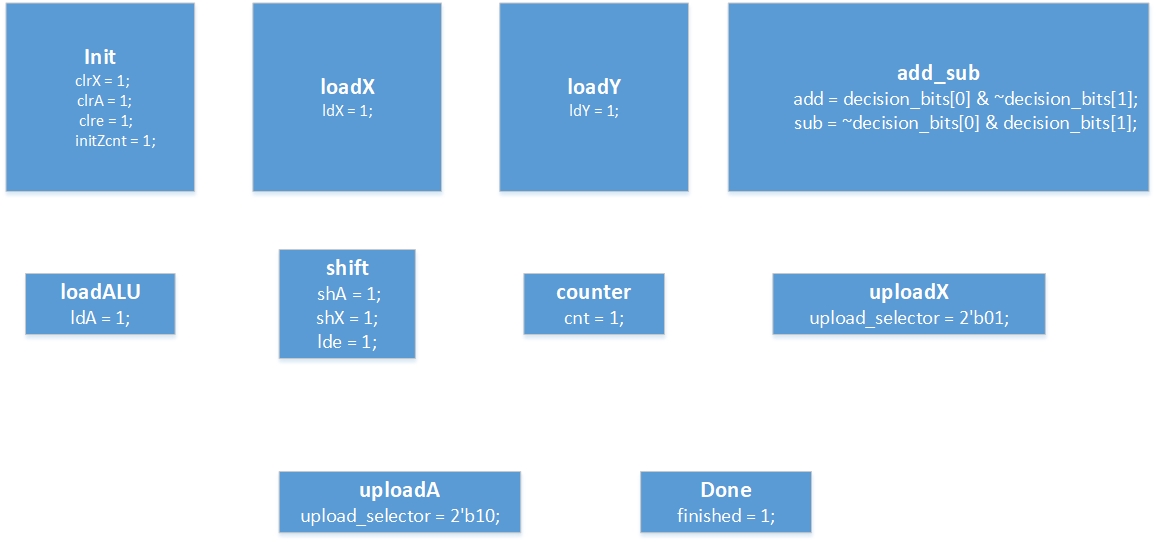


Figure 2

### Counter

A Counter has been added to this controller to control the loop state and finish the procedure in right time. Because the Multiplier has 6 bits so based on Booth Algorithm the iteration should be completed 6 time and this counter controls it properly.

# Data Path