|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Current state | | | INPUT | | | NEXT STATE | | | OUTPUT | | |
| Y1 | Y0 |  | X1 | X0 |  | Y1 | Y0 |  | Z1 | Z0 |  |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 3 |
| otherwise |  | x |  |  | x |  |  | x |  |  | x |
| 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 2 |
| 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 | 2 | 1 | 1 | 3 | 0 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 | 3 | 0 | 1 | 1 | 0 | 0 | 0 |
| 1 | 0 |  | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 0 |  | 0 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 |
| 1 | 0 |  | 1 | 0 | 2 | 1 | 1 | 3 | 0 | 0 | 0 |
| 1 | 0 |  | 1 | 1 | 3 | 1 | 0 | 2 | 0 | 0 | 0 |
| 1 | 1 |  | x | x | x | 0 | 0 | 0 | 0 | 0 | 0 |

Y1Y0 = State

X1X0 = input X1 = a<b X0=start

Z1 = Multiplier x and Multiplier a enable

Z0 = b x a register enable