

Input		Current State		Next State			Output						
		S_n	Q_1^n	Q_0^n	S_{n+1}	Q_1^{n+1}	Q_0^{n+1}	Z_1	Z_2	S_1	R_1	S_0	R_0
0	0	S_0	0	0	S_3	1	1	0	0	1	0	1	0
0	0	S_1	0	1	S_0	0	0	1	0	0	-	0	1
0	0	S_2	1	0	S_3	1	1	0	0	-	0	1	0
0	0	S_3	1	1	S_2	1	0	0	0	-	0	0	1
0	1	S_0	0	0	S_2	1		1	0	1	0		
0	1	S_1	0	1	S_1	0		1	0	0	-		
0	1	S_2	1	0	S_0	0		1	0	0	1		
0	1	S_3	1	1	S_2	1		0	0	-	0		
1	0	S_0	0	0	S_1	0		1	1	0	-		
1	0	S_1	0	1	S_2	1		1	1	1	0		
1	0	S_2	1	0	S_1	0		1	1	0	1		
1	0	S_3	1	1	S_1	0		0	1	0	1		
1	1	S_0	0	0	S_0	0		0	1	0	-		
1	1	S_1	0	1	S_3	1		1	1	1	0		
1	1	S_2	1	0	S_1	0		0	1	0	1		
1	1	S_3	1	1	S_0	0		0	1	0	1		

Q_0				S_1
1	0	-	-	
0	1	0	0	
0	1	0	0	
1	0	-	0	
Q_1				

Q_0				R_1
0	-	0	0	
-	0	1	1	
-	0	1	1	
0	-	0	1	
Q_1				

Q_0				Z_1
0	1	0	0	
1	1	0	1	
0	1	0	0	
1	1	0	1	
Q_1				Z_2

$$R_1 = X_1 Q_1 + X_2 Q_1 \bar{Q}_0$$

$$Z_1 = \bar{Q}_1 Q_0 + X_1 \bar{X}_2 \bar{Q}_0 + \bar{X}_1 X_2 \bar{Q}_0$$