0, 1, 2, 3, 4, 5, 6 0, 6, 5, 4, 3, 2, 1

e - on/off u - up/down

Current State			Next state e=0	e=1	u=0
A	0	000	A	B 001	G 110
B	1	001	B	C 010	A 000
C	2	010	C	D 011	B 001
D	3	011	D	E 100	C 010
E	4	100	E	F 101	D 011
F	5	101	F	G 110	E 100
G	6	110	G	A 000	F 101
H	7	111	H	A 000	G 110

Q_1Q_2 / uQ_0

uQ_0 \ Q_1Q_2	00	01	11	10
00	000	001	011	010
01	100	101	111	110
11	100	101	111	110
10	000	001	011	010

e=0

uQ_0 \ Q_1Q_2	00	01	11	10
00	110	000	010	001
01	011	100	110	101
11	101	110	000	000
10	001	010	100	011

e=1

J

uQ_0 \ Q_1Q_2	00	01	11	10
00	0	0	0	0
01	X	X	X	X
11	X	X	X	X
10	0	0	0	0

e=0

J

uQ_0 \ Q_1Q_2	00	01	11	10
00	1	0	0	0
01	X	0	0	X
11	X	X	X	X
10	0	0	1	0

e=1

K

uQ_0 \ Q_1Q_2	00	01	11	10
00	X	X	X	X
01	0	0	0	0
11	0	0	0	0
10	X	X	X	X

e=0

K

uQ_0 \ Q_1Q_2	00	01	11	10
00	X	X	X	X
01	1	0	0	0
11	0	0	1	1
10	X	X	X	X

e=1

JK

e \ G	00	01	11	10
0	0	G	1	1
1	1	0	0	1

Q_1Q_2 / uQ_0

uQ_0 \ Q_1Q_2	00	01	11	10
00	0	0	0	0
01	1	1	1	1
11	1	1	1	1
10	0	0	0	0

e=0

uQ_0 \ Q_1Q_2	00	01	11	10
00	1	0	0	0
01	0	1	1	1
11	1	1	0	0
10	0	0	1	0

e=1

$J_1 = e\bar{u}\bar{Q}_1\bar{Q}_2 + euQ_1Q_2$ $\quad e(\overline{u \oplus Q_1 \oplus Q_2})$

$K_1 = e\bar{u}\bar{Q}_1\bar{Q}_2 + euQ_1$

J

$u Q_0$ \ Q_1Q_2	00	01	11	10
0	0	0	X	X
01	0	0	X	X
11	0	0	X	X
10	0	0	X	X

$e=0$

uQ_0 \ Q_1Q_2	00	01	11	10
0	1	0	X	X
01	1	0	X	X
11	0	1	X	X
10	0	1	X	X

$e=1$

K

uQ_0 \ Q_1Q_2	00	01	11	10
0	X	X	0	0
01	X	X	0	0
11	X	X	0	0
10	X	X	0	0

$e=0$

uQ_0 \ Q_1Q_2	00	01	11	10
0	X	X	0	1
01	X	X	0	1
11	X	X	1	1
10	X	X	1	0

$e=1$

JK

e \ uQ_0	00	01	11	10
0	0	0	1	1
1	1	0	0	1

uQ_0 \ Q_1Q_2	00	01	11	10
0	0	0	1	1
01	0	0	1	1
11	0	0	1	1
10	0	0	1	1

$e=0$

uQ_0 \ Q_1Q_2	00	01	11	10
0	1	0	1	0
01	1	0	1	0
11	0	1	0	0
10	0	1	0	1

$e=1$

$$J_2 = e\bar{u}\bar{Q}_2 + euQ_2 = e(\overline{u \oplus Q_2})$$

$$K_2 = e(\bar{u}\bar{Q}_2 + uQ_0 + uQ_2) = e(uQ_0 + (\overline{u \oplus Q_2}))$$

D

uQ_0 \ Q_1Q_2	00	01	11	10
0	0	1	1	0
01	0	1	1	0
11	0	1	1	0
10	0	1	1	0

$e=0$

uQ_0 \ Q_1Q_2	00	01	11	10
0	0	0	0	1
01	1	0	0	1
11	1	0	0	0
10	1	0	0	1

$e=1$

D

Q \	0	1
0	0	1
1	0	1

uQ_0 \ Q_1Q_2	00	01	11	10
0	0	1	1	0
01	0	1	1	0
11	0	1	1	0
10	0	1	1	0

$e=0$

uQ_0 \ Q_1Q_2	00	01	11	10
0	0	0	0	1
01	1	0	0	1
11	1	0	0	0
10	1	0	0	1

$e=1$

$$D_2 = \bar{e}Q_2 + e(\bar{u}Q_1\bar{Q}_2 + Q_0\bar{Q}_1\bar{Q}_2 + u\bar{Q}_0\bar{Q}_2)$$
$$= \bar{e}Q_2 + e\bar{Q}_2(\bar{u}Q_1 + Q_0\bar{Q}_1 + u\bar{Q}_0)$$