

2x4 decoder

en	in1	in0	y3	y2	y1	y0
0	*	*	1	1	1	1
1	0	0	1	1	1	0
	0	1	1	1	0	1
	1	0	1	0	1	1
	1	1	0	1	1	1

dec 3x8

$s_2 s_1 s_0 \quad y_7 y_6 y_5 y_4 y_3 y_2 y_1 y_0$

0	0	0	1	1	1	1	1	1	1	0
0	0	1								1
0	1	0								1
0	1	1								1
1	0	0								0
1	0	1								0
1	1	0								0
1	1	1								0

dec 2x4

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s_2 (s_1, s_0)

s_2 (s_1, s_0)

fa ba fb bb

$fa = fb \ \& \ ba = bb \rightarrow eq$

$fa = fb \ \& \ ba > bb \rightarrow gr$
 $ba < bb \rightarrow ls$

$fa > fb \rightarrow gr$

$fa < fb \Rightarrow ls$

4 bit x, y
 1 bit carry_in

4 bit z

+ EAC

x 0 0 1 1 C₁

y 0 1 1 0 C₁

z 0 0 1