Truth Table

Sensor #4 (Low)	Sensor #3 (Low)	Sensor #2 (Low)	Sensor #1 (High)	Output
0	0	0	0	0
0	0	0	1	1
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	0
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

K-maps

	#2 (0)	#2 (0)	#2 (1)	#2 (1)	
#3 (0)	0	1	1	0	#4 (0)
#3 (0)	0	1	1	1	#4 (1)
#3 (1)	0	1	1	1	#4 (1)
#3 (1)	0	1	1	1	#4 (0)
	#1 (0)	#1 (1)	#1 (1)	#1 (0)	

SOP function = #1 + (#2 * #3) + (#2 * #4)