Decoder


```
En A0 A1|  O0 O1 O2 O3 |  Expected Output
0   0   0 |  0   0   0   0 |  All false
0   1   0 |  0   0   0   0 |  All false
0   0   1 |  0   0   0   0 |  All false
0   1   1 |  0   0   0   0 |  All false
1   0   0 |  1   0   0   0 |  O0 Only
1   1   0 |  0   1   0   0 |  O1 Only
1   0   1 |  0   0   1   0 |  O2 Only
1   1   1 |  0   0   0   1 |  O3 Only
```
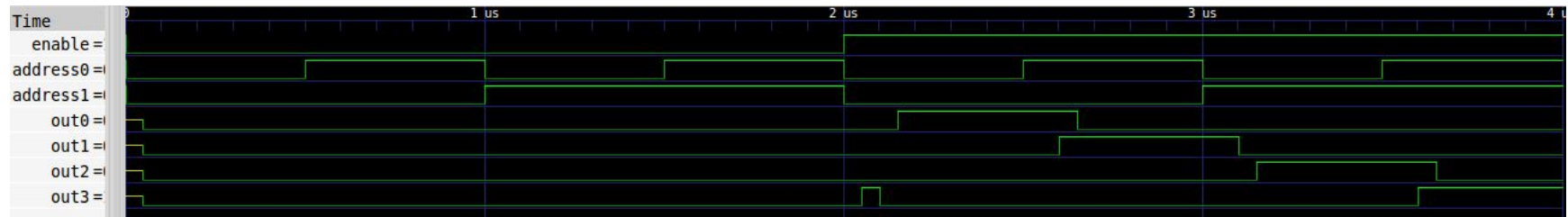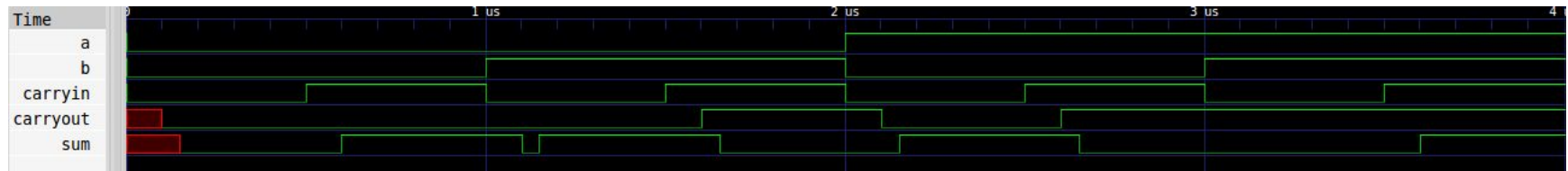
Multiplexer


```
I0 I1 I2 I3 | A0 A1 | O | Expected Output
----------------------------------------
 1  x  x  x |  0  0 | 1 | Selects in0
 x  1  x  x |  1  0 | 1 | Selects in1
 x  x  1  x |  0  1 | 1 | Selects in2
 x  x  x  1 |  1  1 | 1 | Selects in3
----------------------------------------
 0  x  x  x |  0  0 | 0 | Selects in0
 x  0  x  x |  1  0 | 0 | Selects in1
 x  x  0  x |  0  1 | 0 | Selects in2
 x  x  x  0 |  1  1 | 0 | Selects in3
```

Adder


```
A B Cin | Cout S  | Expected Output
0 0  0  |  0    0  |   0   0
0 0  1  |  0    1  |   0   1
0 1  0  |  0    1  |   0   1
0 1  1  |  1    0  |   1   0
1 0  0  |  0    1  |   0   1
1 0  1  |  1    0  |   1   0
1 1  0  |  1    0  |   1   0
1 1  1  |  1    1  |   1   1
```