

```
timescale 1ns / 1ps
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
// Company:
// Engineer:
//
// Create Date: 11/03/2020 03:54:47 PM
// Design Name:
// Module Name: Selector
// Project Name:
// Target Devices:
// Tool Versions:
// Description:
//
// Dependencies:
//
// Revision:
// Revision 0.01 - File Created
// Additional Comments:
//
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
```

```
module Selector(
    input [3:0] sel,
    input [15:0] N,
    output [3:0] H
);

    assign H = (N[15:12] & {4{( sel[3] & ~sel[2] & ~sel[1] & ~sel[0])}})|
    (N[11:8] & {4{(~sel[3] & sel[2] & ~sel[1] & ~sel[0])}})|
    (N[7:4] & {4{(~sel[3] & ~sel[2] & sel[1] & ~sel[0])}})|
    (N[3:0] & {4{(~sel[3] & ~sel[2] & ~sel[1] & sel[0])}});

    //H is N[15:12] when sel=(1000);
    //H is N[11:8] when sel=(0100);
    //H is N[7:4] when sel=(0010);
    //H is N[3:0] when sel=(0001);

endmodule
```