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BSCpE-3A

ENCODER WITH PRIORITY

```vhdl
1    library IEEE;
2    use IEEE.STD_LOGIC_1164.ALL;
3    use IEEE.STD_LOGIC_ARITH.ALL;
4    use IEEE.STD_LOGIC_UNSIGNED.ALL;
5    entity en_wpriority is
6        Port ( i : in  STD_LOGIC_VECTOR (7 downto 0);
7               y : out  STD_LOGIC_VECTOR (2 downto 0));
8    end en_wpriority;
9    architecture Behavioral of en_wpriority is
10   begin
11   with i select
12   y<="000" when "00000111",
13   "001" when "00000110",
14   "010" when "00000101",
15   "011" when "00000100",
16   "100" when "00000011",
17   "101" when "00000010",
18   "110" when "00000001",
19   "111" when others;
20   end Behavioral;
```

i[7..0]

Mux0

7:2   SEL[5..0]   OUT

64'hfffffffffffffffd   DATA[63..0]

Mux1

7:3,1   SEL[5..0]   OUT

64'hfffffffffffffffd   DATA[63..0]

Mux2

7:3,0   SEL[5..0]   OUT

64'hfffffffffffffffd   DATA[63..0]

y[2..0]