



clk >

clk

angle[7:0]

bitpos[7:0]
8

enable_mov

enable_mov

```

28
29  //-- 9 bits position of the servo.
30  // The additional byte is to avoid an overflow in the trim sum
31  reg [8:0] pos;
32
33  //-- Position check and assignment
34
35  always @(posedge clk)
36  begin
37
38      //The position will be the sum of the input position +trim
39      pos<=bitpos+$signed(trim);
40
41      if (enable_mov ==0) //If the motor is not enabled
42      begin
43          pos<=BITH+$signed(trim);
44      end
45      else if (pos>BIT1) //If the pos exceeds the maximum
46      begin
47          pos<=BIT1;
48      end
49      else if (pos<BIT0) //If the pos exceeds the minimum
50      begin
51          pos<=BIT0;
52      end
53      else //If the pos is ok. Then the pos will be the sum of the input
54      //bitpos plus the trim
55      begin
56          pos<=bitpos+$signed(trim);
57      end
58
59  end
60

```

servo

servo_pin

To control a servo you must enter a number between 0-255 or hex equivalent at bitpos

- bitpos input sets the angle of movement between 0-255
- enable_mov input at 0 holds the home position
- min and max controls the min and max value of movement to protect the system
- home sets the home position for the servo
- trim establish an offset value for calibration