

```

/*
 * SSpwm.c
 *
 * Created: 12/10/2013 17:23:35
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 *
=====
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=====
 *
 * Description
 * -----
 * PWM wave generation using single-slope
   Compare uses channel B
   Output will be at OC1B, pin PD5
   as the program uses TCD1 and channel B

 * The output's duty cycle varies from 0 to 90 %

 */

#define F_CPU 2000000UL
#define __AVR_ATxmega128A3U
#include "avr/io.h"
#include "util/delay.h"

unsigned int i;

int main(void)
{
    // PD5 defined as output
    PORTD_DIR = 0x20;

    // TOP value (79) associated at PER register
    TCD1.PER = 79;

    // Div by 1, waveform generation mode: single-slope PWM
    TCD1.CTRLA = TC_CLKSEL_DIV1_gc;
    TCD1.CTRLB = TC1_CCBEN_bm | TC_WGMODE_SINGLESLOPE_gc;

    while(1)
    {
        // Varies D between 0 to 90 %
        for (i=8;i<71;i++)
        {
            TCD1_CCB = i;
            _delay_ms(40);
        }
    }
}

```