

```
#include <avr/io.h>
#include "MultiSegEvGen.h"

int main(void)
{
    char State = EVSTATE_RELEASE;
    char in;

    DDRD = 0xf0;
    DDRB = 0x0f;

    PORTD |= 0xff;
    PORTD &= State;
    PORTB &= ~EVSTATEOUT_SUSTAIN;
    PORTB |= EVSTATEOUT_RELEASE;

    while(1)
    {
        switch(State)
        {
            case EVSTATE_RELEASE:
                do {
                    in = PORTD & EVGATE;
                }while(!in);
                State = EVSTATE_ATTACK;
                PORTD |= 0xff;
                PORTD &= State;
                PORTB &= ~EVSTATEOUT_RELEASE;
                PORTB |= EVSTATEOUT_ATTACK;
                break;
            case EVSTATE_ATTACK:
                do {
                    in = PORTD & EVDONE;
                }while(!in);
                State = EVSTATE_SEG1;
                PORTD |= 0xff;
                PORTD &= State;
                PORTB &= ~EVSTATEOUT_ATTACK;
                PORTB |= EVSTATEOUT_SEG1;
                break;
            case EVSTATE_SEG1:
                do {
                    in = PORTD & EVDONE;
                }while(!in);
                State = EVSTATE_SUSTAIN;
                PORTD |= 0xff;
                PORTD &= State;
                PORTB &= ~EVSTATEOUT_SEG1;
                PORTB |= EVSTATEOUT_SUSTAIN;
                break;
            case EVSTATE_SUSTAIN:
                do {
                    in = PORTD;
                }while(!(in & EVDONE) || (in & EVGATE));
                State = EVSTATE_RELEASE;
                PORTD |= 0xff;
                PORTD &= State;
                PORTB &= ~EVSTATEOUT_SUSTAIN;
                PORTB |= EVSTATEOUT_RELEASE;
                break;
        }
    }
}
```

```
#ifndef MULTISEGEVGEN__H
#define MULTISEGEVGEN__H

/*
    Envelope Generator States
*/

#define EVSTATE_RELEASE      0x70
#define EVSTATE_ATTACK      0xe0
#define EVSTATE_SEG1        0xd0
#define EVSTATE_SUSTAIN     0xb0

/*
    State Outputs
*/

#define EVSTATEOUT_RELEASE   0x08
#define EVSTATEOUT_ATTACK   0x01
#define EVSTATEOUT_SEG1     0x02
#define EVSTATEOUT_SUSTAIN  0x04

/*
    State Machine Inputs
*/

#define EVGATE               0x04
#define EVDONE               0x08
#endif
```