**#include** "F28x\_Project.h"

**void** **ConfigureADC**(**void**);

**void** **Gpio\_select**(**void**);

**void** **Setup\_ePWM**(**void**);

\_\_interrupt **void** **ePWM3\_isr**(**void**);

\_\_interrupt **void** **adc\_isr**(**void**);

Uint16 adcresult0;

Uint16 DAC\_input;

**void** **main**(**void**){

**InitSysCtrl**();

**InitGpio**();

**InitEPwm3Gpio**();

DINT;

**InitPieCtrl**();

IER = 0x0000;

IFR = 0x0000;

**InitPieVectTable**();

ConfigureADC();

Gpio\_select();

Setup\_ePWM();

EALLOW;

PieVectTable.EPWM3\_INT = &ePWM3\_isr;

PieVectTable.ADCA1\_INT = &adc\_isr;

EDIS;

IER |= 0x0005; //rows

PieCtrlRegs.PIEIER1.bit.INTx1 = 1;//column

PieCtrlRegs.PIEIER3.bit.INTx3 = 1;//column

EINT;

ERTM;

**while**(1){

}

}

**void** **Gpio\_select**(**void**){

EALLOW;

GpioCtrlRegs.GPAMUX1.bit.GPIO4 = 1;

GpioCtrlRegs.GPAMUX1.bit.GPIO5 = 1;

EDIS;

}

**void** **Setup\_ePWM**(**void**){

EPwm3Regs.TBCTL.bit.CLKDIV = 7;

EPwm3Regs.TBCTL.bit.HSPCLKDIV = 7;

EPwm3Regs.TBCTL.bit.CTRMODE = 0;

EPwm3Regs.TBPRD = 55804;

EPwm3Regs.CMPA.bit.CMPA = 55804/2;

EPwm3Regs.AQCTLA.all = 0x0012;

EPwm3Regs.ETSEL.bit.SOCAEN = 1;

EPwm3Regs.ETSEL.bit.SOCASEL = 1;

EPwm3Regs.ETPS.bit.SOCAPRD = 1;

EPwm3Regs.ETCLR.bit.SOCA = 1;

EPwm3Regs.ETSEL.bit.INTEN = 1;

EPwm3Regs.ETSEL.bit.INTSEL = 1;

EPwm3Regs.ETPS.bit.INTPRD = 1;

EPwm3Regs.ETCLR.bit.INT = 1;

}

**void** **ConfigureADC**(**void**){

EALLOW;

AdcaRegs.ADCCTL2.bit.PRESCALE = 6;

**AdcSetMode**(ADC\_ADCA, 0, 0);

AdcaRegs.ADCCTL1.bit.INTPULSEPOS = 1;

AdcaRegs.ADCCTL1.bit.ADCPWDNZ = 1;

DELAY\_US(1000);

AdcaRegs.ADCSOC0CTL.bit.CHSEL = 1;

AdcaRegs.ADCSOC0CTL.bit.ACQPS = 19;

AdcaRegs.ADCSOC0CTL.bit.TRIGSEL = 9;

AdcaRegs.ADCINTSEL1N2.bit.INT1SEL = 0;

AdcaRegs.ADCINTSEL1N2.bit.INT1E = 1;

AdcaRegs.ADCINTFLGCLR.bit.ADCINT1 = 1;

EDIS;

}

\_\_interrupt **void** **adc\_isr**(**void**){

adcresult0 = AdcaResultRegs.ADCRESULT0;

AdcaRegs.ADCINTFLGCLR.bit.ADCINT1 = 1;

**if**(1 == AdcaRegs.ADCINTOVF.bit.ADCINT1){

AdcaRegs.ADCINTOVFCLR.bit.ADCINT1 = 1;

AdcaRegs.ADCINTFLGCLR.bit.ADCINT1 = 1;

}

PieCtrlRegs.PIEACK.all = PIEACK\_GROUP1;

}

\_\_interrupt **void** **ePWM3\_isr**(**void**){

DAC\_input = DAC\_input + 2;

**if**(DAC\_input>4095){

DAC\_input = 0;

}

PieCtrlRegs.PIEACK.all = PIEACK\_GROUP3;

EPwm3Regs.ETCLR.bit.INT = 1;

}