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/*****************************************************************************
 Module
   MotorDrive.c

*****************************************************************************/
/*---------------------------- Include Files ----------------------------*/
// Basic includes for a program using the Events and Services Framework

#include "HEADERS.h"


/*---------------------------- Module Defines ----------------------------*/
//Only for use on Port U on E128


/*---------------------------- Module Functions ----------------------------*/



/*---------------------------- Module Variables ----------------------------*/
void  MotorDriveInit ()
{
     //*** PWM Initialization ***//
      PWME |= (_S12_PWME3 | _S12_PWME4);  //set PWM Chan 3&4 enabled
      PWMPOL |= _S12_PPOL4; // set to output initially high
      PWMPOL |= _S12_PPOL3; // set to output initially high
      PWMCLK |= _S12_PCLK4 | _S12_PCLK3; // select clock SA /SB
      PWMPRCLK |= _S12_PCKA1 | _S12_PCKA0 | _S12_PCKB1 | _S12_PCKB0; // set clk to M/8
      PWMSCLA = PWM_PRESCALAR; // set CLOCKSA to 20 kHz
      PWMSCLB = PWM_PRESCALAR; // set CLOCKSB to 20 kHz
      MODRR |= (_S12_MODRR4 |_S12_MODRR3); // Map ports T4 & T3 to PWM chan 4 and chan 3
      PWMPER4 = 128; // 100*20kHz = 200 Hz period;
      PWMPER3 = 128;

      PWMDTY3 = 0;
      PWMDTY4 = 0;
      // make motor drive directions outputs
      MOTOR_DRIVE_REG |= (MOTOR_LB |MOTOR_RB);


}


void SetMotorDriveDuty(int DC, char channel) //DC between -128 and 128, where - causes
the motor to spin in reverse
{

   DC -= 128;

       if (channel == MOTOR_LA){ //Motor direction
              if (DC < 0) {
                 MOTOR_DRIVE_PORT |= MOTOR_LB;
              } else {
                    MOTOR_DRIVE_PORT &= ~MOTOR_LB;
              }
       } else if (channel == MOTOR_RA){
              if (DC < 0) {
                    MOTOR_DRIVE_PORT |= MOTOR_RB;
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                } else {
                        MOTOR_DRIVE_PORT &= ~MOTOR_RB;
                }
        }

        if (DC < 0) DC *= -1;
        if(DC < 0) DC = 0;
        if(DC > 128) DC = 128;

        switch(channel)
        {

                case MOTOR_RA:
                        PWMDTY3 = DC;
                        break;
                case MOTOR_LA:
                        PWMDTY4 = DC;
                        break;

        }
}
```