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/*****
/* Program      : 25CxxSPI.H
/* Function     : SPI EEPROM Utility Procedures Header File
/* Author      : John F. Fitter B.E.
/*
/*             The procedures communicate with the eeprom via the hardware
/*             spi facilities.
/*
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*****/

#ifndef _25CXXSPI_H
#define _25CXXSPI_H

// Hardware defines
#define E2PORT      PORTE           // port for eeprom select
#define E2DIR      TRISE           // direction reg for eeprom select
#define E2PIN      0               // port pin for eeprom select

// EEPROM instruction set
#define E2READ      3
#define E2WRITE     2
#define E2WREN      6
#define E2WRDI      4
#define E2RDSR      5
#define E2WRSR      1

// EEPROM status register bits
#define WIP          1
#define WEL          2
#define BP0          4
#define BP1          8
#define WPEN         0x80

// Bank protect defines
#define PROTECT_NONE 0
#define PROTECT_QTR  BP0|WPEN
#define PROTECT_HALF BP1|WPEN
#define PROTECT_ALL  BP0|BP1|WPEN

// Macros
#define select_eeprom()  e2_cs=B_LOW           // select the EEPROM
#define deselect_eeprom() e2_cs=B_HIGH;delay_2us() // deselect the EEPROM
#define toggle_eeprom()  e2_cs=B_HIGH;delay_2us();e2_cs=B_LOW // toggle EEPROM cs line

// Function prototypes
extern void init_eeprom();
extern void wren_eeprom();
extern void print_eestring(unsigned int);
extern void write_eestring(unsigned int, const unsigned char*);
extern void write_eeprom(unsigned int, unsigned char);
extern unsigned char read_eeprom(unsigned int);
extern unsigned char read_eeprom_deselect(unsigned int);
extern double read_double_eeprom(unsigned int);

static volatile bit e2_cs @ (unsigned)&E2PORT*8+E2PIN; // eeprom not chip select
static bit e2_cs_dir @ (unsigned)&E2DIR*8+E2PIN; // eeprom not chip select direction

#endif // _25CXXSPI_H

// ***** EOF 25CXXSPI.H *****

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