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/*
 * USART3_asynch_test.c
 *
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 */

#define F_CPU 4000000
#define USART3_BAUD_RATE(BAUD_RATE) ((float)(F_CPU * 64 / (16 *(float)BAUD_RATE))) // ↗
    Calculation of baud rate from data sheet
#include <avr/io.h>
#include <util/delay.h>

//Header functions
void USART3_sendChar(char c);

int main(void)
{
    PORTB.DIR |= PIN0_bm; //Set PB0 as output (TX pin)
    USART3.BAUD = (uint16_t)USART3_BAUD_RATE(9600); //Taken from data sheet to ↗
        calculate baud rate
    USART3.CTRLB |= USART_TXEN_bm; //Enable USART transmitter

    while (1)
    {
        //Send a character to the Tera Term (TX pin)
        USART_sw_write('U');
        _delay_ms(1); //Wait in a loop to send character again
    }
}

//Function to be able to transmit characters
//to the TX pin and display on the Tera Term
void USART_sw_write(char c)
{
    //Poll until the transmit buffer register are empty
    //when they contain data that has not been moved to
    //transmit shift register
    while (!(USART3.STATUS & USART_DREIF_bm))
    {
        ;
    }

    //Load data to transmit shift register and
    //output each of the bits serially to the TXD pin
    USART3.TXDATAL = c;
}
```