

UNCC, Department of Electrical and Computer Engineering, ECGR 4101/5101
Fall 2006, Homework #8, Due: 11/2/06, at the beginning of class (20 points)

0. How long did this homework take you? (1 point)
1. What are the minimum and maximum baud rates at which UART1 of an 24 MHz M16C30626 can communicate? Remember to take advantage of the internal clock source selection options. Assume $f_{\text{SIO}}=24$ MHz. Show your work. (3 points)
2. Consider a byte of data transmitted at 9600 baud with 8 data bits, 1 parity bit, 1 start bit and 2 stop bits. How long does the entire message (byte with overhead) take to transmit? Show your work. (2 points)
3. Write a C function called `Init_UART0(void)` to initialize the UART0 port for interrupted serial communications. Use the following parameters:
 - one stop bits
 - no parity
 - eight data bits, LSB first
 - 19200 baud
 - system clock of 24 MHz
 - CTS/RTS disabled
 - CMOS (aka push-pull/totem pole) outputEnable the transmitter and receiver. Assume the standard setup as shown in the notes. Make sure to set ALL of the necessary control registers. Use the control register names defined in `sfr626.h`. (10 points)
4. For the previous question, what is the actual baud rate generated? What is the error, as a percentage of the desired baud rate? (4 points)