

UNC Charlotte, Department of Electrical and Computer Engineering
ECGR 4101/5101, Fall 2008, Homework #7
Due: 11/5/2008, at the beginning of class (20 points)

Assignment should be typed, a hard copy turned in to instructor

1. (1 point) How long did this homework take you?
2. (7 points) Read the article “What Can C Structures Do for You?” from the November issue of Circuit Cellar Ink. Answer the following questions:
 - a. What is the motivation of this project? (2 pts)
 - b. How many and what types processors are used in the device. (1 pts)
 - c. Describe the author’s statements on UML, and why you should use UML in your activities. (4 pts)
3. Consider a byte of data transmitted at 9600 baud with 9 data bits, 1 parity bit, 1 start bit and one stop bit, system clock of 12 Mhz. How long does the entire message (byte with overhead) take to transmit? Show your work. (2 points)
4. Repeat Question 3, but with a system clock of 24Mhz. Show your work. (2 points)
5. Write a C function called `Init_UART(void)` to initialize the UART0 port for polled serial communications. Use the following parameters:
 - a. one stop bits
 - b. no parity
 - c. eight data bits, LSB first
 - d. 19200 baud
 - e. system clock of 12 MHz
 - f. CTS/RTS disabled
 - g. CMOS (aka push-pull/totem pole) output

Enable 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 `sfr262.h`. (8 points)