CECS 447 Microcontroller III
Fall 2019 Lab 2: Introduction to UART

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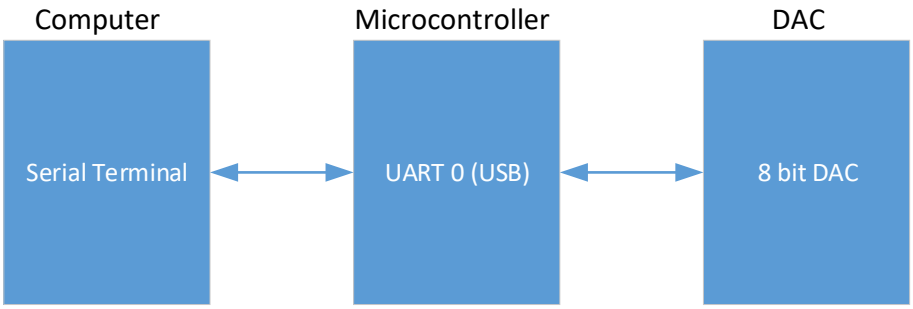
Description:
You are to become familiar with the concept of the UART and ways to communicate through serial interface such as Realterm, Putty, Tera Term, and so on. A Universal Asynchronous Receiver/Transmitter, abbreviated UART, is a piece of computer hardware that translates data between parallel and serial forms. UARTs are commonly used in conjunction with communication standards such as RS-232. In its simplest form, a UART can be thought of as a two wire system where one line is transmitting and the other is receiving. The parallel data is reformatted into a serial stream. The universal designation indicates that the data format and transmission speeds are configurable.

Serial terminal <-> MCU_1 communication <-> DAC

• The user will send commands using a serial terminal to the microcontroller and vice versa



Sending Characters from the serial terminal to the microcontroller

a. Send a char ‘r’ to microcontroller, output a sawtooth wave
b. Send a char ‘t’ to microcontroller, output a triangle wave
c. Send a char ‘s’ to microcontroller, output a sine wave
d. Send a char ‘q’ to microcontroller, output a square wave
e. Once character has been sent to Microcontroller, a confirmation message will be sent back to the serial terminal. Example confirmation message when ‘t’ is sent: “triangle wave is displayed”
f. By default, a sawtooth wave is shown on reset

Group of 2

- If you have a partner, both people must be present to demo
- No Lab Report
- No Late Demo
- Due October 14, 2019 end of lab