

Assignment #11 – Receive Serial Data

Objectives

The proficient student will write a program to receive information from the computer serially and use the data for output.

Goal

Use the setup from #9 (Serial & Computers) to transmit data from the computer to the PIC microcontroller.

Materials

- Breadboard – wire w/ 5V power regulator, switch, and LED
- PIC18F45K22
- Computer w/ MPLAB XC 8
- PICkit 3
- Newhaven 2x16 Serial LCD
- MAX202 w/ capacitors
- Serial cord

Directions

- You will be working in pairs.
- You will be documenting your work in your lab notebook.
- Task 1:
 - Code and wire the PIC18F45K22 to receive data from a computer serially. Whatever the PIC receives it will display on the LCD.
- Task 2:
 - Write code to do everything as above and the following...
 - The text needs to wrap to the second line of the LCD and back to the first line appropriately.
 - When you type a specific character of your choosing, the screen needs to clear.
- Task 3:
 - Write code to do everything from task 1, 2 and the following...
 - When you type a special character of your choosing, the PIC will turn on LEDs representing the binary representation of the next ASCII character that the PIC receives.
 - Extra feature: When you press backspace, the last character on the LCD is deleted (it would mimic how backspace works on a computer.)

Grading:

- Task 1: _____ 5 points
- Task 2: _____ 10 points
- Task 3: _____ 5 points
- Lab notebook: _____ (10 points)