

CO326: Industrial Networks

Lab 03 - USB

Introduction

You are supposed to run a USB simulation using Proteus software that uses PIC18f4550 IC and USB

Steps

1. Install MPLAB X IDE, X8 compiler, Microchip Libraries for Applications (only USB examples)
2. Install Proteus and it's USB emulator (It is recommended to run proteus inside a virtual machine as it might cause blue screens on windows)
3. Install teraterm
4. Draw the circuit diagram on proteus as on Fig.1
5. Open the example for PIC18f4550
(C:\microchip\mla\v2016_04_27\apps\usb\device\cdc_basic\firmware\picd
em_fs_usb.x)
6. Refer to the datasheet of the PIC and change configuration bits as required (hint: pay attention to PLLDIV, CPUDIV, USBDIV, FOSC, VREGEN and MCLRE bits)
7. Compile the project and load the hex file into the PIC IC in proteus
8. Run the proteus simulation and verify using the TeraTerm

Lab task

Modify the USB example such that it takes a complete sentence from user upto the return character (\r) and convert only the simple english characters to the capital letters and print back. This should happen in a loop

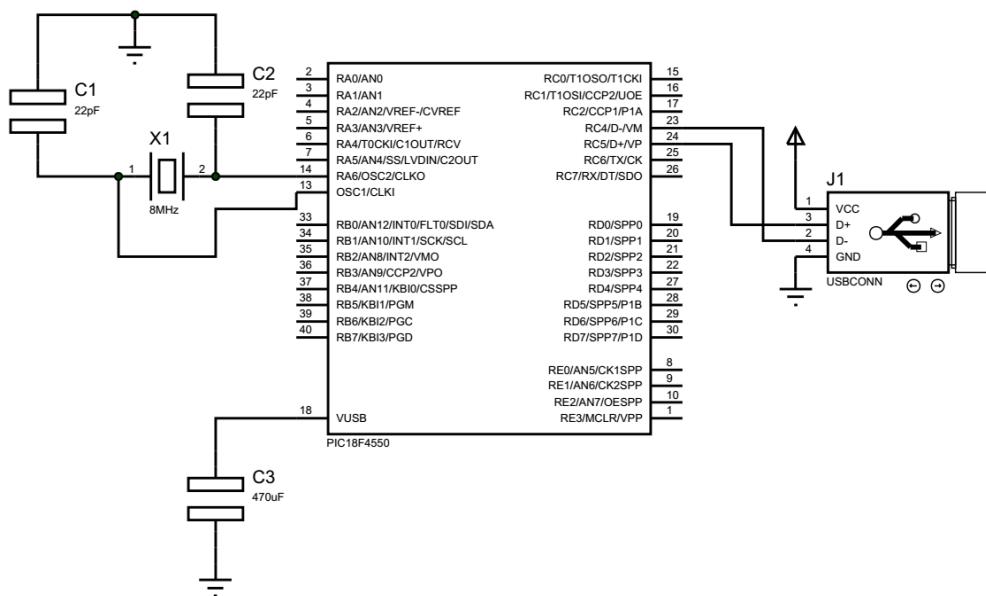


Fig. 1 : Proteus circuit diagram