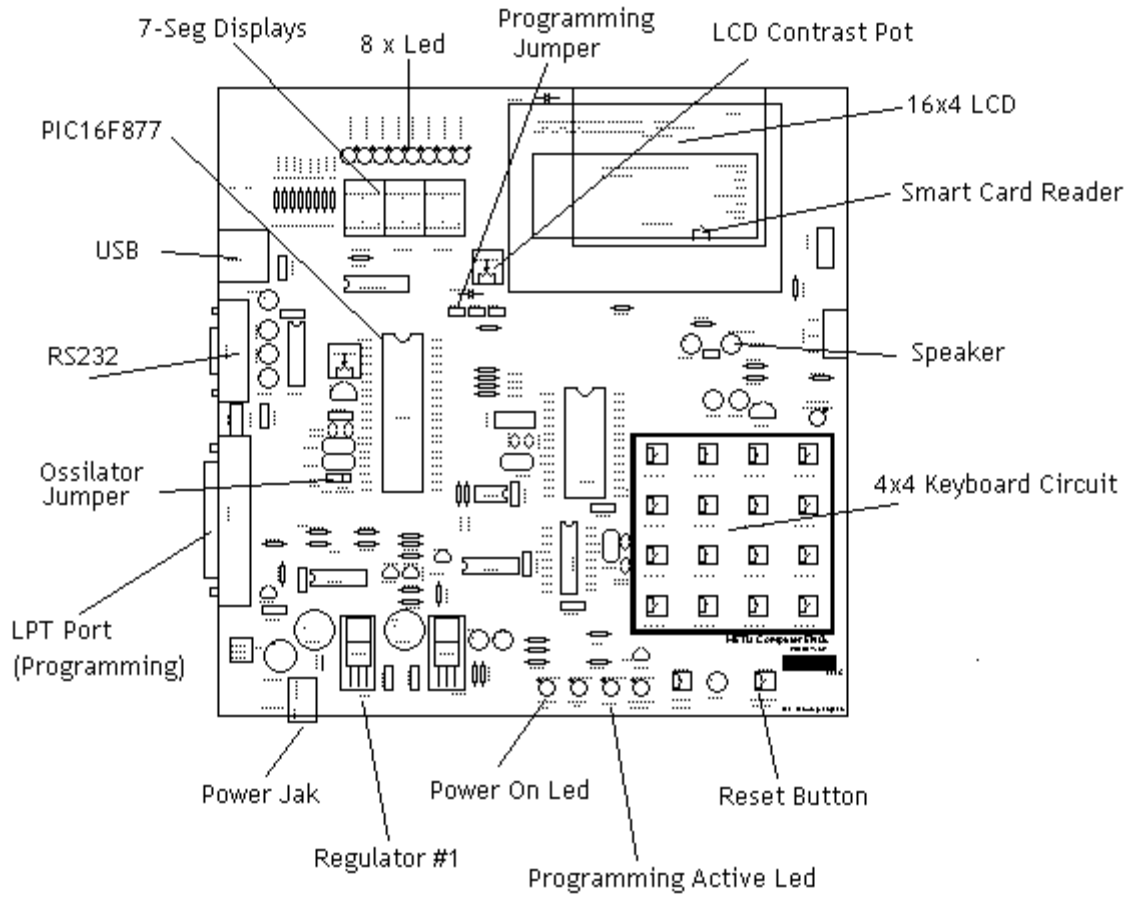
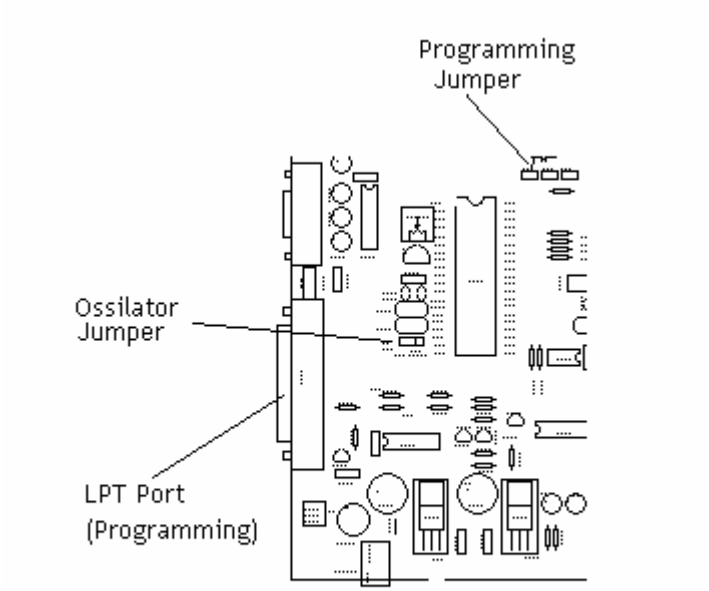


ATTENTION

1- Do not touch or bend while you are working on PICDEV.
2- Use recommended power supply (15V)
3- Make sure that “Programming Jumper” is SHORTED if you want to program PIC.
4- Make sure that “Programming Jumper” is REMOVED if you want to RUN your program you have downloaded.
5- Do not remove or plug any cable while power is on.
6- Do not apply power for a long time. Suggestion is that after you try your code, you need to make power off using power jak.
7- Make sure that “Oscillator Jumper” is correct while you run your code. Note that you do not need Oscillator Jumper while you download your code.
8- LPT Port can be used only for programming purpose.
9- Do not touch “Regulator”s and LCD.
10- You can find detailed manual at course’s web page http://www.ceng.metu.edu.tr/courses/ceng336/documents.html

Programming Specifications



Make sure that proper parallel port cable is plugged both computer and PICDEV. Do not any cable connection and do not remove one of them while power of PICDEV is on.

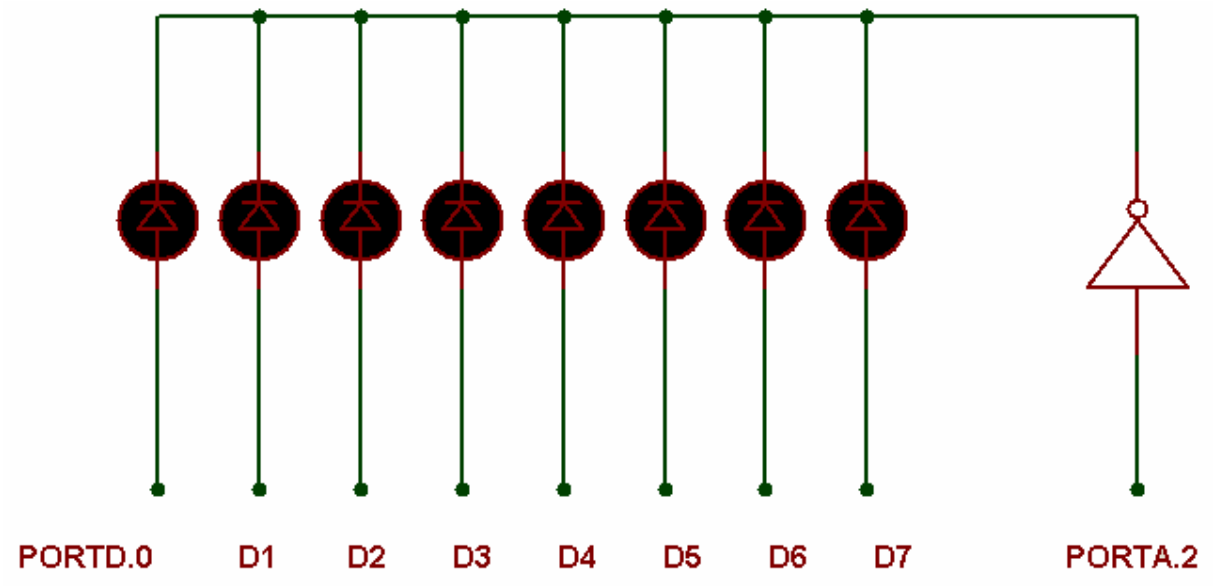
If you want to download your ".hex" file into PICDEV, you will make "Programming Jumper" shorted. To do this, you may use oscillator jumper because you do not need to clock while downloading.

You should use "icprog105D" program on PC. Detailed descriptions are available at web page. http://www.ceng.metu.edu.tr/courses/ceng336/documents.html

PICDEV MODULES

1- LEDs

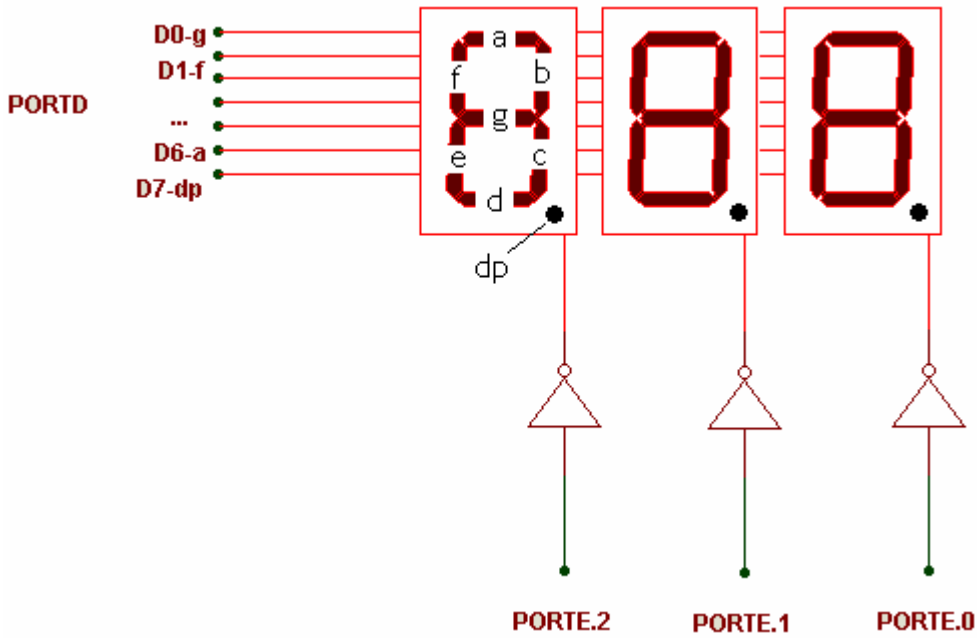
There are 12 leds on PICDEV. 8 leds are connected to PORTD on PIC16f877 as shown below, and others are Power On, VProg On, Prog and Circuit ERROR leds. When you make power connection Power On and VProg On leds will emit light. While programming progress , Prog led will turn on. Circuit ERROR led does not important at this level.



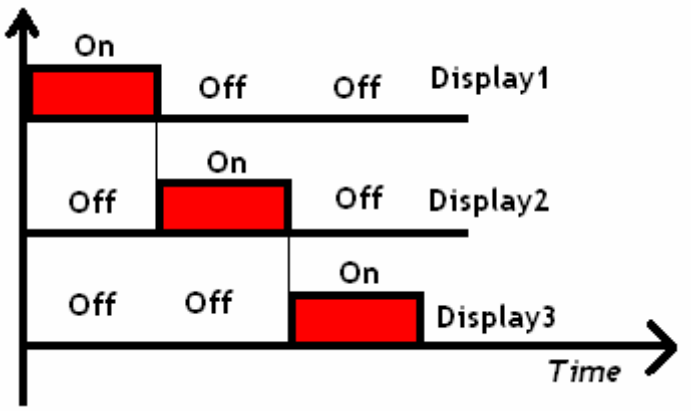
You should select led module using PORTA.2 pin. For example, if you want to make D2 and D5 leds on, after making PORTA.2 pin at logic1, then you will send 00100100 to PORTD. Note that PORTA is default analog input, so you need to be careful. (ADCON registers)

2- 7-segment Displays

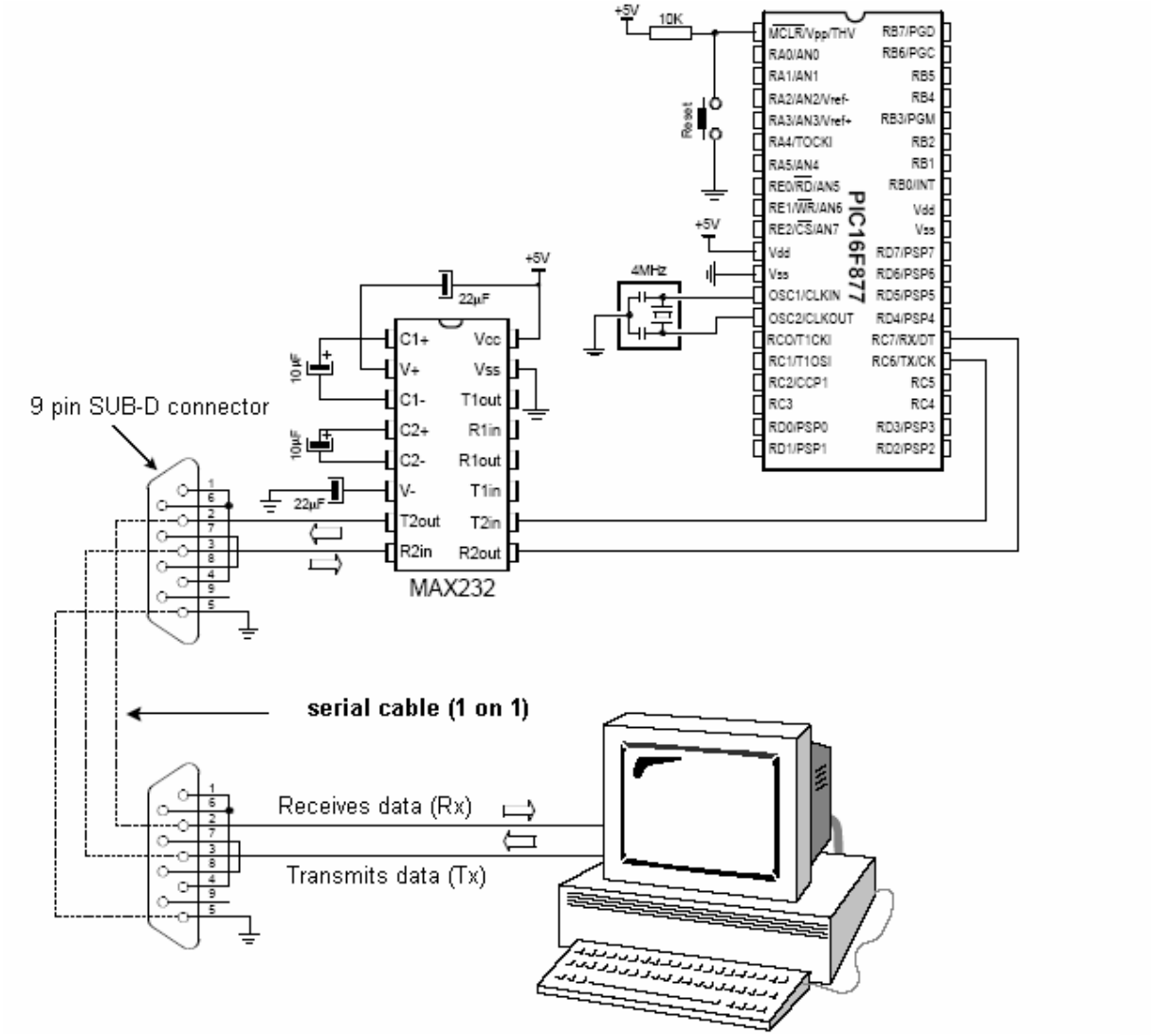
There are 3 common cathode displays mounted on PICDEV. PORTD will be used as data bus, and PORTE will be used as selection. For example if you want to show number “3” on leftmost display, you will first select it by setting PORTE.2 bit, then to show number “3”, you will send binary “10011110” to PORTD, hence, f,e and dp segments will be 0, a,b,c,d and g segments will turn on. Note that PORTD.7 pin is used for dp pin of displays. Attention that PORTE is assigned by PIC as default analog input (See ADCON1 register), and PORTD is shared. Think how you can use both leds and three displays.



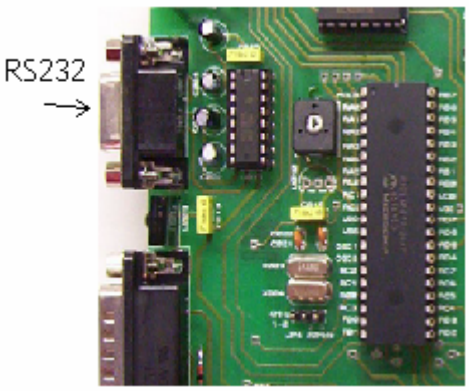
If you want to display, for instance ”123”, you will first select only first digit, then you will send “1” and wait for a while, after that, you will select only second digit, then you will send “2” etc.



3- Universal Synchronous Asynchronous Receiver Transmitter (USART) Module – RS232



RS232 (USART) communication is used for communication between two devices within 10m distance. It is commonly used for data transfer with computer. If 40-pin (like 16f877) MCU is used, transmit and receive pins will connected to RC6 and RC7. Figures show the connection between computer and the development system. Detailed descriptions (reference manual chapter18,USART) are available at web page www.ceng.metu.edu.tr/courses/ceng336/links.html



NOTE: The PORTC pins that will used by the USART must be set as inputs.