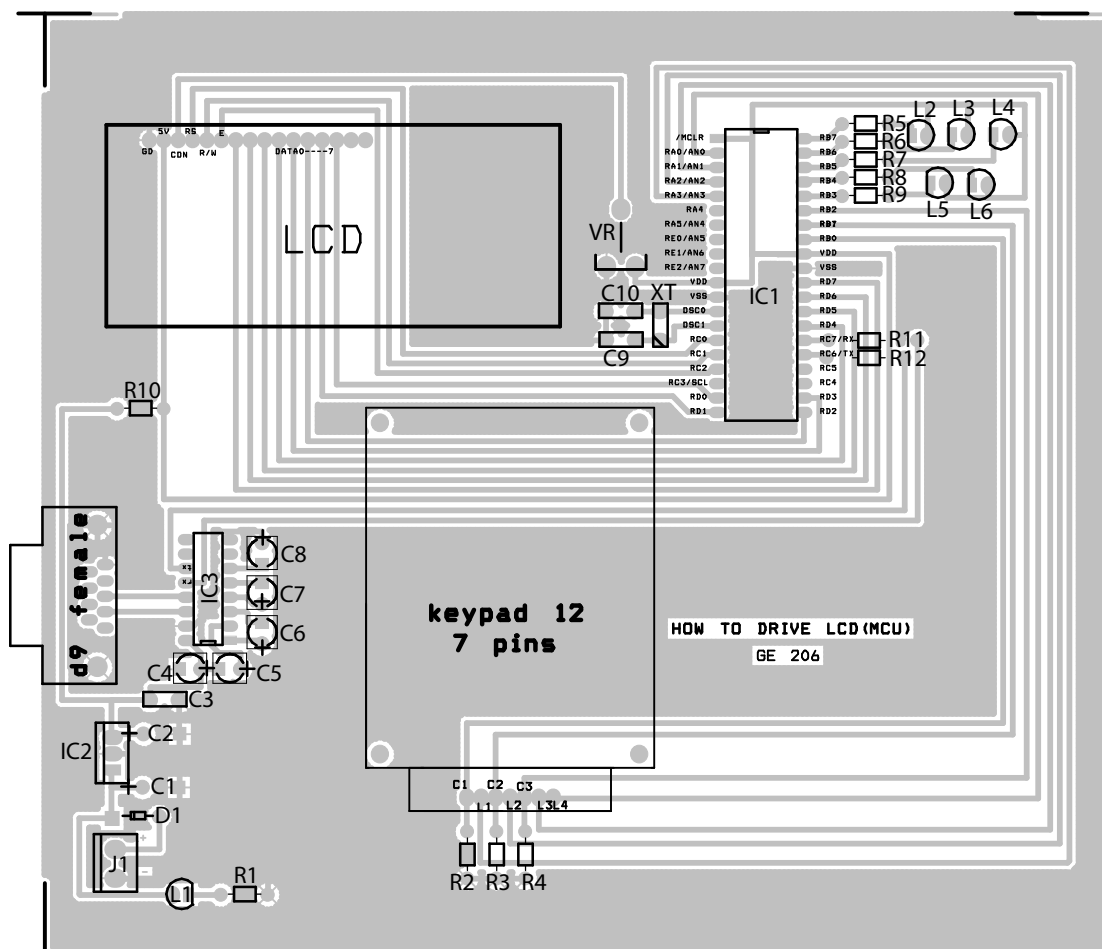
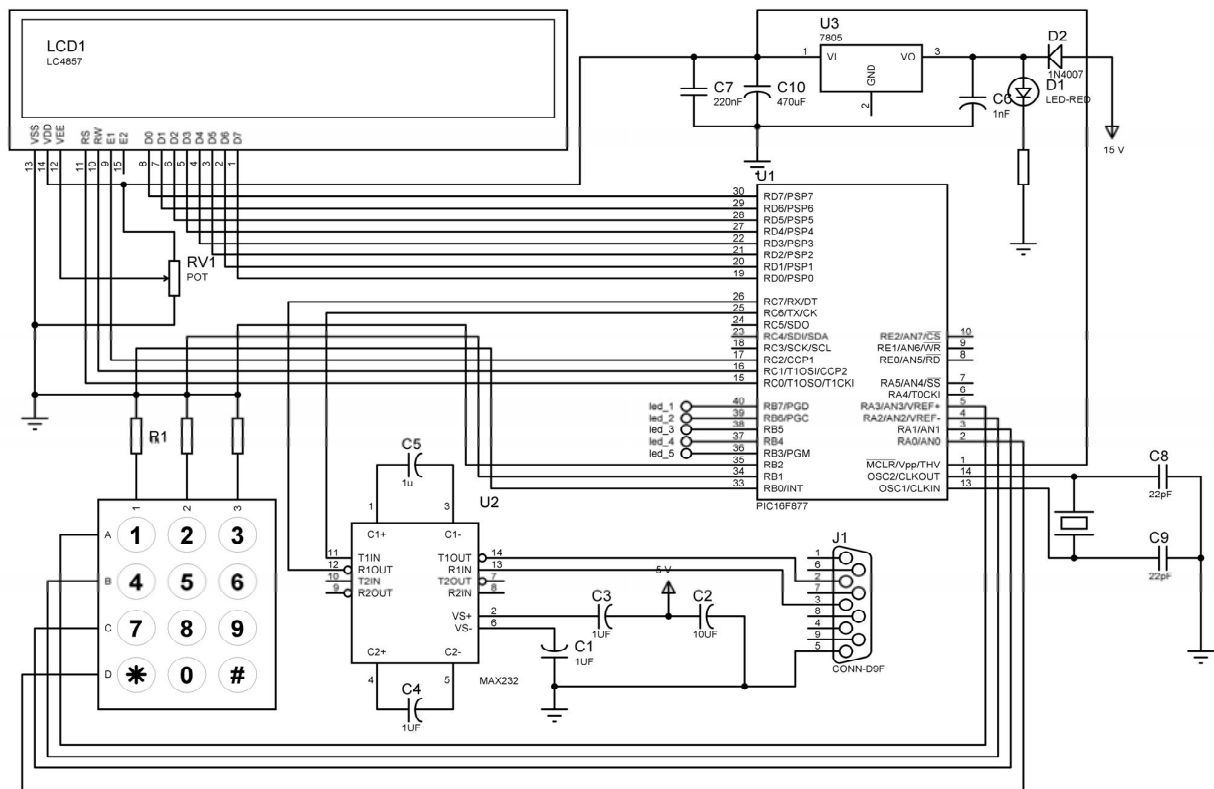


HOW TO DRIVE LCD (MCU)

GE 206



Please refer to next page-->

BILL OF MATERIALS:

R1➔R9:	1K OHM (Brown, Black, Red)	IC2:	7805 (Voltage Regulator)
R10➔R12:	0 OHM (Black)	IC3:	Max232
VR:	Variable resistor 47K	IC Support	16 pins
C1, C2:	470 UF 16V	IC Support	40 pins
C3:	220 nF 50V (224)	L1:	LED Green 5mm
C4:	10 UF 25V	L2➔L6:	LED Red 5mm
C5➔C8:	1Uf 25V	Telephone Keypad	(4*3)
C9, C10:	22PF 50V (22)	LCD	16 character 2 lines
D1:	Signal Diode (1N4007)	DB9 female connector	(Serial port)
XT:	Crystal 4Mhz	J1:	Screw Junction
IC1:	Pic16F877A		

Description

This kit contains two functional parts:

- 1- Type on lcd using PC serial port.
- 2- Type on lcd Using Matrix keypad.

The LCD is controlled by keypad and by PC via Serial Port. All data that will be send by the keypad or the PC will appear on the LCD.

The interface with PC via Serial Port is realized by using the MAX232 connected to the Serial Port.

Connection

1. LCD connection:

The LCD has 16 pins, 8 of these pins are data pins and 3 of them are command pins and the 5 other pins are for power supply the light and the contrast.

The LCD displays each character you send to it.

This LCD has 2 lines and each line contains 16 characters.

The Data pins 7 to 14 are connected to the PORTD.

The pin 4 (RS) is connected to PORTC, 0

The pin 5 (RW) is connected to PORTC, 1

The pin 6 (E) is connected to PORTC, 2.

2. keypad connection:

The keypad contains 4 lines and 3 colons for data each time we push a button we select a line and a colon.

The pin 0 (C1) is connected to PORTB, 0.

The pin 2 (C2) is connected to PORTB, 1.

The pin 4 (C3) is connected to PORTB, 2.

The pin 1 (L1) is connected to PORTA, 3.

The pin 3 (L2) is connected to PORTA, 2.

The pin 5 (L3) is connected to PORTA, 1.

The pin 6 (L4) is connected to PORTA, 0.

3. Serial port Connection:

The MAX232 is connected to the Microcontroller with 2 pins:

Pin 11 is connected to the TX (transmit) of the PIC16F877A, PORTC, 6.

Pin 12 is connected to the RX (receive) of the PIC16F877A, PORTC, 7
