



EXPT. NO. : 9

TITLE: On chip ADC Programming With PIC Micro Controller

```
#include<p18f4550.h>
#include"vector_relocate.h"

#define LCD_DATA   PORTD           //LCD data port           //LCD signal port
#define en         PORTEbits.RE2   // enable signal
#define rw         PORTEbits.RE1   // read/write signal
#define rs         PORTEbits.RE0   // register select signal

Void LCD_cmd(unsigned char cmd);
Void myMsDelay (unsigned int time)
{
    Unsigned int i, j;
    For (i = 0; i < time; i++)
        For (j = 0; j < 665; j++);
}

Void init_LCD(void)
{
    LCD_cmd(0x38); // initialization of 16X2 LCD in 8bit mode
    myMsDelay(15);

    LCD_cmd(0x01); // clear LCD
    myMsDelay(15);

    LCD_cmd(0x0E); // cursor off
    myMsDelay(15);

    LCD_cmd(0x80);
    myMsDelay(15);

}

//Function to pass command to the LCD
Void LCD_cmd(unsigned char cmd)
```



```
{
    LCD_DATA = cmd;
    Rs = 0;
    Rw = 0;
    En = 1;
    myMsDelay(15);
    en = 0;
    myMsDelay(15);
}

//Function to write data to the LCD
Void LCD_write(unsigned char data)
{
    LCD_DATA = data;
    Rs = 1;
    Rw = 0;
    En = 1;
    myMsDelay(15);
    en = 0;
    myMsDelay(15);
}

Void main(void)
{
    Unsigned int val[4],ADC_Result=0,var;
    Unsigned char i,str[]="Result:";

    TRISD = 0x00;    //Configuring PORTD as output

    TRISE=0;
    TRISA=0xFF;
    Init_LCD();
    // ADC Initialization
    ADCON1=0x0C;
    ADCON2=0x8E;
```



```
ADCON0=0X09; //Turn ON ADC module
```

```
LCD_cmd(0x80);  
For(i=0;str[i]!='\0';i++)  
{  
LCD_write(str[i]);  
myMsDelay(200);  
}  
While(1)  
{  
ADCON0bits.GO=1;  
While(ADCON0bits.GO==1);  
Var=((unsigned int)ADRESH) << 8;  
ADC_Result=var+ADRESL;
```

```
For(i=0;i<4;i++)  
{  
Val[i]=ADC_Result%0x0A;  
Val[i]=val[i]+0x30;  
ADC_Result=ADC_Result/0x0A;  
}
```

```
LCD_cmd(0x87); // LCD command to set DDRAM address. (DDRAM: Display Data RAM)  
LCD_write(val[3]);  
LCD_write(val[2]);  
LCD_write(val[1]);  
LCD_write(val[0]);  
  
}  
}
```

