1602 LCD Display Module

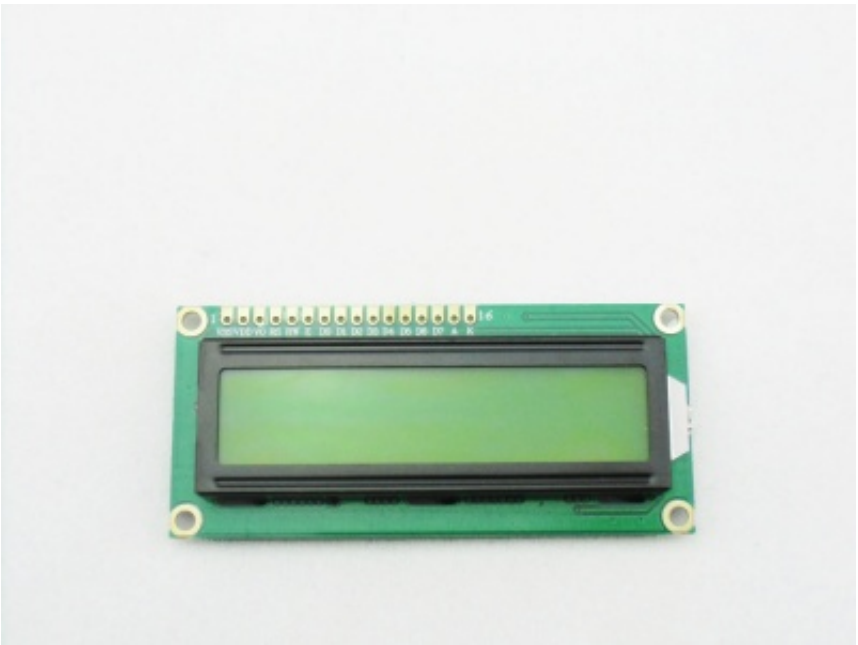
From Elecrow

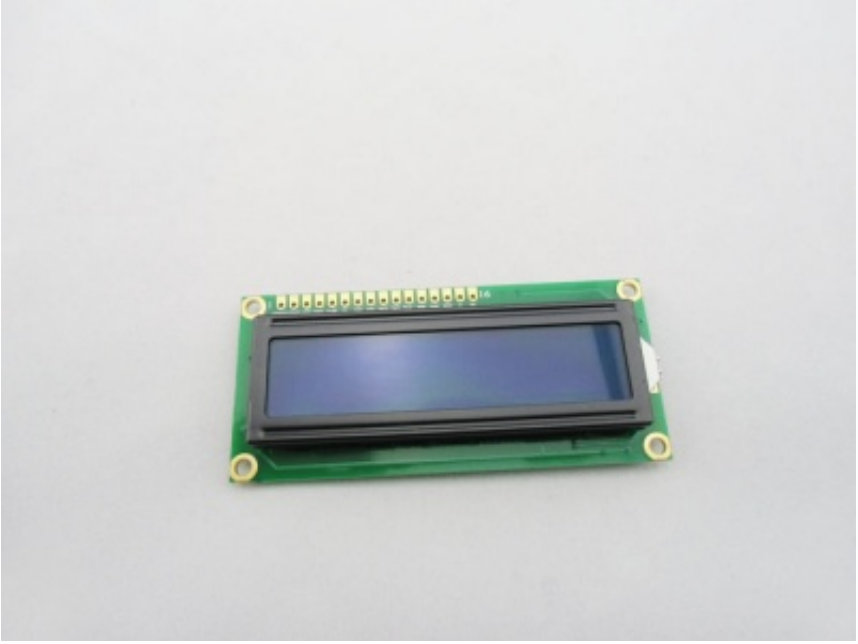
Contents

Description

This is a basic 16 character by 2 line display. Black text on Green/Blue background. Interface code is freely available. You will need 7 or 11 general I/O pins to interface to this LCD screen. Includes LED backlight.

Click here back to the purchase page (http://www.openhacks.com/page/productos/id/650) .





pin mapping of LCD module

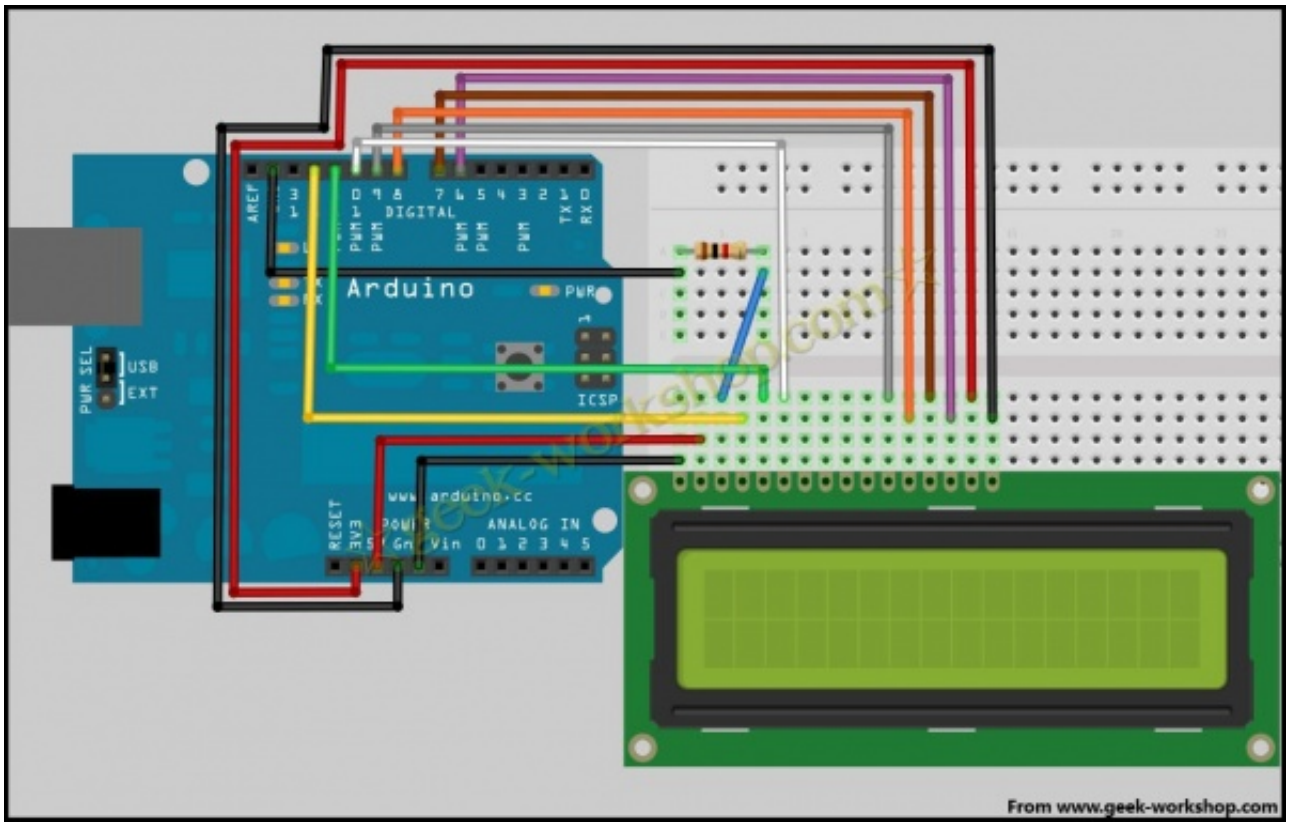
Pin Number	Sign	Remark	Pin Number	Sign	Remark
1	VSS	GND	9	D2	Data I/O
2	VDD	VCC	10	D3	Data I/O
3	VL	Contrast ratio	11	D4	Data I/O
4	RS	Data/Command Choice	12	D5	Data I/O
5	R/W	Write/Read Choice	13	D6	Data I/O
6	E	Enble	14	D7	Data I/O

7	D0	Data I/O	15	BLA	Back light anode
8	D1	Data I/O	16	BLK	Back light cathanode

How to control

Hardware Install

Connect the LCD module with Arduino following picture.



Software upload

Upload the following code to the Arduino or download the Arduino library (http://www.openhacks.com/uploadsproductos/liquidcrystal.zip)

```
int LCD1602_RS=12;
int LCD1602_RW=11;
int LCD1602_EN=10;
int DB[] = { 6, 7, 8, 9};
char str1[]="Welcome to";
char str2[]="Elecrow";
char str3[]="this is the";
char str4[]="4-bit interface";

void LCD_Command_Write(int command)
{
```

```
 int i,temp;
 digitalWrite( LCD1602_RS,LOW);
 digitalWrite( LCD1602_RW,LOW);
 digitalWrite( LCD1602_EN,LOW);

 temp=command & 0xf0;
 for (i=DB[0]; i <= 9; i++)
 {
   digitalWrite(i,temp & 0x80);
   temp <<= 1;
 }

 digitalWrite( LCD1602_EN,HIGH);
 delayMicroseconds(1);
 digitalWrite( LCD1602_EN,LOW);

 temp=(command & 0x0f)<<4;
 for (i=DB[0]; i <= 9; i++)
 {
   digitalWrite(i,temp & 0x80);
   temp <<= 1;
 }

 digitalWrite( LCD1602_EN,HIGH);
 delayMicroseconds(1);
 digitalWrite( LCD1602_EN,LOW);
}

void LCD_Data_Write(int dat)
{
 int i=0,temp;
 digitalWrite( LCD1602_RS,HIGH);
 digitalWrite( LCD1602_RW,LOW);
 digitalWrite( LCD1602_EN,LOW);

 temp=dat & 0xf0;
 for (i=DB[0]; i <= 9; i++)
 {
   digitalWrite(i,temp & 0x80);
   temp <<= 1;
 }

 digitalWrite( LCD1602_EN,HIGH);
 delayMicroseconds(1);
 digitalWrite( LCD1602_EN,LOW);

 temp=(dat & 0x0f)<<4;
 for (i=DB[0]; i <= 9; i++)
 {
   digitalWrite(i,temp & 0x80);
   temp <<= 1;
 }

 digitalWrite( LCD1602_EN,HIGH);
 delayMicroseconds(1);
 digitalWrite( LCD1602_EN,LOW);
}

void LCD_SET_XY( int x, int y )
{
  int address;
  if (y ==0)    address = 0x80 + x;
  else          address = 0xC0 + x;
  LCD_Command_Write(address);
}
```

```
void LCD_Write_Char( int x,int y,int dat)
{
  LCD_SET_XY( x, y );
  LCD_Data_Write(dat);
}

void LCD_Write_String(int X,int Y,char *s)
{
    LCD_SET_XY( X, Y );     //设置地址
    while (*s)              //写字符串
    {
      LCD_Data_Write(*s);
      s ++;
    }
}

void setup (void)
{
  int i = 0;
  for (i=6; i <= 12; i++)
   {
     pinMode(i,OUTPUT);
   }
  delay(100);
  LCD_Command_Write(0x28);//4线 2行 5x7
  delay(50);
  LCD_Command_Write(0x06);
  delay(50);
  LCD_Command_Write(0x0c);
  delay(50);
  LCD_Command_Write(0x80);
  delay(50);
  LCD_Command_Write(0x01);
  delay(50);

}

void loop (void)
{
   LCD_Command_Write(0x01);
   delay(50);
   LCD_Write_String(3,0,str1);//第1行，第4个地址起
   delay(50);
   LCD_Write_String(4,1,str2);//第2行，第2个地址起
   delay(5000);
   LCD_Command_Write(0x01);
   delay(50);
   LCD_Write_String(0,0,str3);
   delay(50);
   LCD_Write_String(0,1,str4);
   delay(5000);

}
```

Resource

Arduino library (http://www.openhacks.com/uploadsproductos/liquidcrystal.zip)
