PROJECT 6: THE PARALLAX SERIAL LCD MODULE

Requirements:

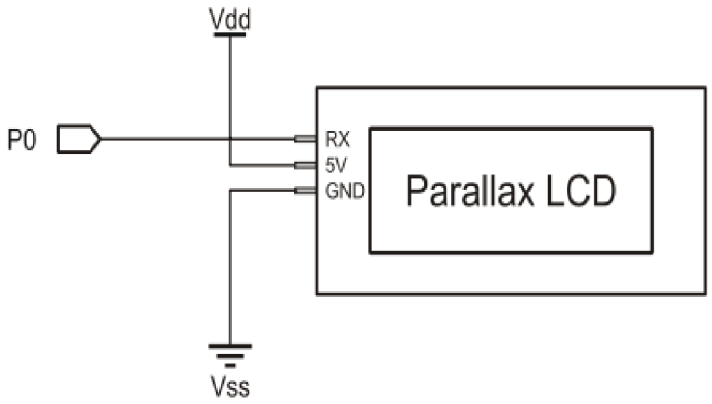
1 – The Software CD

1 – Propeller (Any)

1 – Parallax Serial LCD Module

1 – 10" or 14" LCD Extension cable.

Experience Level: Beginner



An LCD module is a "must have" for any Propeller experimenter. The Parallax serial LCD (part#27979) displays four lines of data with a backlight for easy viewing. You'll also want a Parallax LCD Extension cable (part#805-00012) as the LCD module doesn't plug directly into a beadboard well. The extension cable is packaged with a male-to-male three pin header allowing easy an easy connection between the the breadboard and the cable.

PPDB, Demoboard, & PEkit Notes:

Plug in the LCD extension cable into the back of the LCD module, connecting the black wire to the GND connection. Plug the three pin header into the breadboard, and connect the other end of the LCD extension cable. Jumper from white to (Propeller) P0, another from red to 5v (Vdd), and a third from black to Ground (Vss).

Start by testing your power connections by switching both LCD switches to the "off" position. These two switches are located on the rear of the LCD. The LCD module should light up with the words, Parallax, Inc. www.parallax.com. Once you've verified the power and ground connections, switch both switches to "on" setting the module to receive data at 19,200 baud.

Required Software:

Locate the folder "**Serial LCD**" on the CD image which was provided with this text.

Load the file "**HelloWorld**" into the Propeller Tool and press F10 to upload it.

Our program uses several other spin programs to display text. The files **Debug_LCD.spin, Serial_Lcd.spin,** and **Simple_Numbers.spin** are stored in the same folder and are called automatically when we upload our program to the Propeller. As we make use of various spin objects you will find this practice a common occurrence.

The **HelloWorld** program is broken into three parts. The **CON** section defines the speed for the Propeller to operate, in this case 80mhz. The **OBJ** section calls on the Debug_LCD object and it's related code in the same folder. The **PUB** section starts the actual use of the LCD module.

Let's break down the commands in **PUB** for a better understanding:

The start command tells **Debug_LCD** to look for an LCD module on P0, running at 19_200 baud, which has a four line display.

```
lcd.start(0, 19_200, 4)
```

The **cursor(0)** simply disables the underscore cursor used on the LCD

```
lcd.cursor(0)
```

The backlight can be true or false indicating it to be on or off.
This command becomes important in projects which are battery operated.

```
lcd.backLight(true)
```

This command simply clears the screen.

```
lcd.cls
```

The **str(string(" "))** command allows us to display text data.
Noticed the 13? These are carriage returns. If a line of data is too long to display on a single 20 character line, the LCD simply moves to the next line and continues the display.

```
lcd.str(string("HELLO WORLD", 13))
lcd.str(string("THE PARALLAX SERIAL LCD MODULE DISPLAYS YOUR
    INFORMATION.",13))
```