

## 4-Character 7-Segment LED Spin Demo



**Please Note:** This product is not sold by Parallax. This demo was created to support the 2013 National microMedic Contest kits which are no longer available.

The 4-Character 7-segment display can be used in your project to display numbers or letter characters. This tutorial will show you how to wire the display to your Propeller Board of Education and demonstrate the use of the included Spin language driver `seven_segments_of_fun.spin`.

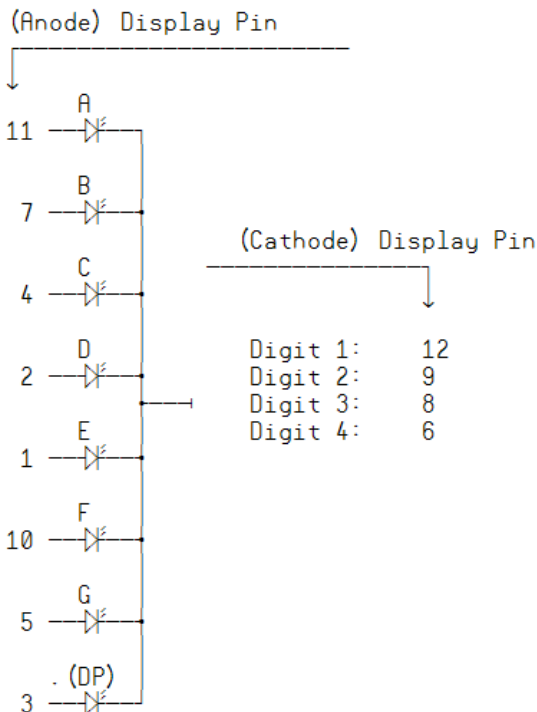
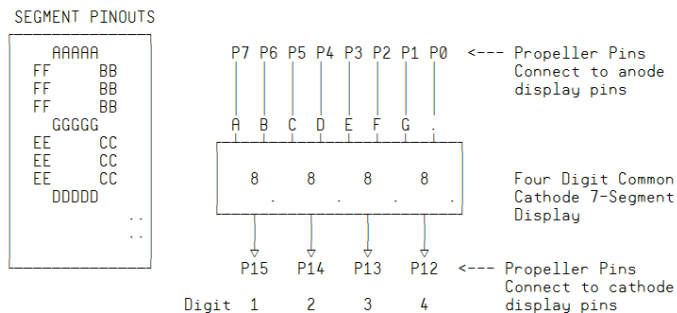
### Demo Part Requirements

- (1) Propeller Board of Education
- (1) 4 character 7-segment display
- (12) Jumper Wires

### Connections

This display is a Lumex LDQ-N516RI ([see the Manufacturer datasheet](#)). Each of the four characters has seven segments and a decimal point, for eight anode pins. It is a “common cathode” display, meaning that the cathodes of each LED segment of a character are tied together. Since there are four characters on the display, there are four cathode display pins. In order to activate a segment on the display, positive voltage must be applied to the desired segment and the cathode of the desired character should be connected to ground, thereby creating a complete circuit. If this sounds complicated, have no fear - the supplied driver "`seven_segments_of_fun.spin`" takes care of all the logistics associated with driving the display. The driver instructs the Propeller chip to pulse its I/O pins very quickly so that each character on the display receives power for a short amount of time. Due to persistence of vision, your eye perceives each character to be lit simultaneously.

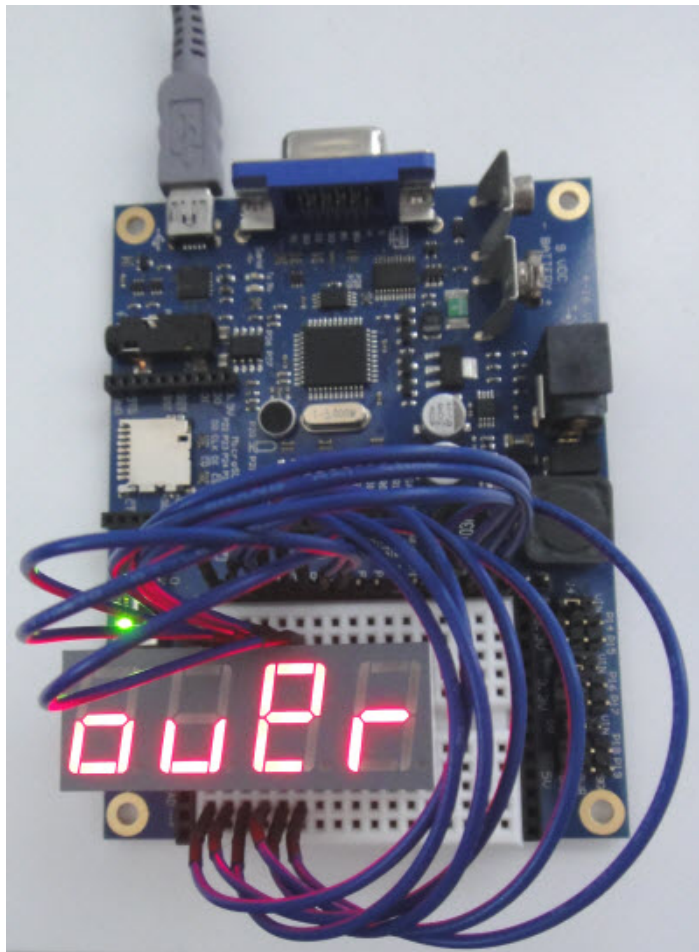
The Propeller Board of Education can drive the display directly by sourcing and sinking an electric current to each segment and character of the display. The connection diagram below shows how to connect the Propeller P8X32A's I/O pins to the display. The diagram can also be found in the source code file "seven segment DEMO.spin".



## Spin Programming

Once you have correctly wired the display to the board's I/O pins, open the top demo file, "seven segment DEMO.spin", with the Propeller Tool. With your Propeller BOE board connected to your computer and the power switch set to position 1 or 2, click Run>>Compile Current>>Load RAM, or press the F10 key on your keyboard. This will compile and download the demo program.

You should see the display start to show characters and text. Take a look at the source code file "seven segment DEMO.spin" - in the method "firstprocedure" you can see what information will be displayed on the four character seven segment display. The first thing displayed is a string of dashes, "-----", followed by a scrolling string "Seven Segments oF Fun", and so on... If the characters on your display look jumbled or incomprehensible, it is very likely that you have miswired the display. In that case, double check your connections with the connection diagram shown in the code.



Play with the code a little – have fun with it. Try writing your name and get it to scroll across the display.