Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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Trackball Module (#27908)

Add a fun human interface component to your Propeller microcontroller projects with the Trackball Module from Parallax! Similar to the trackball found on many smart phones, this sensor is easily portable and can be used to replace a mouse in many applications. The Trackball Module comes with a built-in center select switch and a red LED, which can be programmed to light up the trackball when desired.

Features

- Built-in center select switch and red LED
- Detects movement in the up, down, left, right, and diagonal directions
- 8-pin DIP module is ready for breadboard or through-hole projects
- Built-in 1 kΩ series resistors for compatibility with the Propeller microcontroller and other 3.3 V devices

Key Specifications

- Power requirements: 5 VDC
- Communication: Four-pin variable-frequency binary signaling output (for trackball)
- Operating temperature: 32 to 158 °F (0 to +70 °C)
- Dimensions: 1.0 x 1.0 x 0.67 in (25.4 x 25.4 x 17.08 mm)

Application Ideas

- Mouse replacement
- Video game input

Device Information

Theory of Operation

The Trackball Module has four tiny rotatable magnets attached to each corner of the component. Rotating the Trackball Module in the up, down, left, or right directions will result in the rotation of one magnet, while any diagonal movement will result in the rotation of two magnets.

Whenever any of the magnets rotate, a tiny magnetic field is created, which can be detected by a Hall Effect sensor paired with each magnet. The Hall Effect sensor will then output a series of high/low signals which can be monitored by the Propeller microcontroller to determine the direction of movement of the trackball. The speed of rotation is then proportional to the period of the pulse, where slow rotation will result in a longer period and faster rotation will result in a shorter period.

Note: The Trackball Module does require a small break-in period before the ball will rotate smoothly.

Pin Definitions and Ratings

| Pin	Name	Function
1	+5V	5V Supply Voltage
2	OPA	Output of Hall Effect IC - Up
3	SW	Center select switch, active-high
4	OPB	Output of Hall Effect IC - Left
5	GND	Ground -> 0V
6	OPC	Output of Hall Effect IC - Down
7	LED	LED control pin
8	OPD	Output of Hall Effect IC - Right

Connection Diagram

For use with the example program included on the Trackball Module product page.
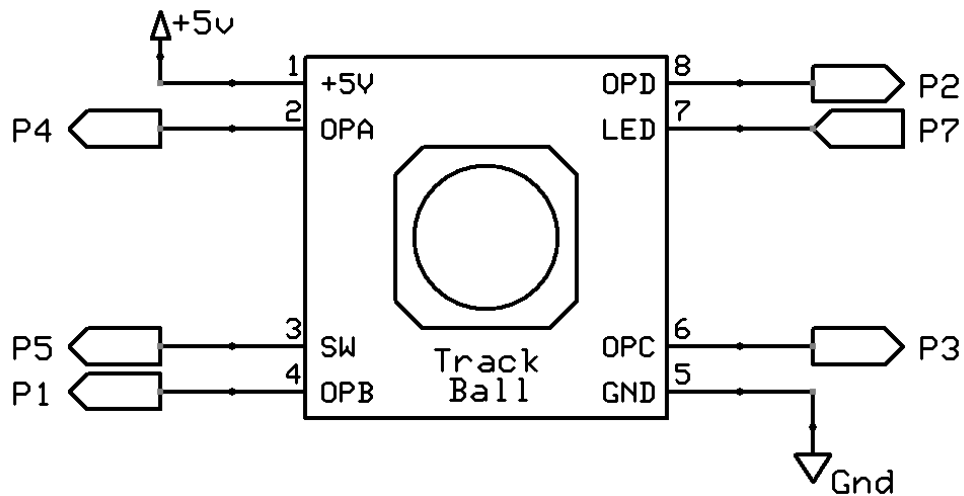
Propeller™ P8X32A Application

The Trackball Module Demo uses the Parallax Serial Terminal to display the current movement of the Trackball Module. The Parallax Serial Terminal itself is installed with the Propeller Tool v1.2.7 which is available from the Downloads link at www.parallax.com/Propeller.
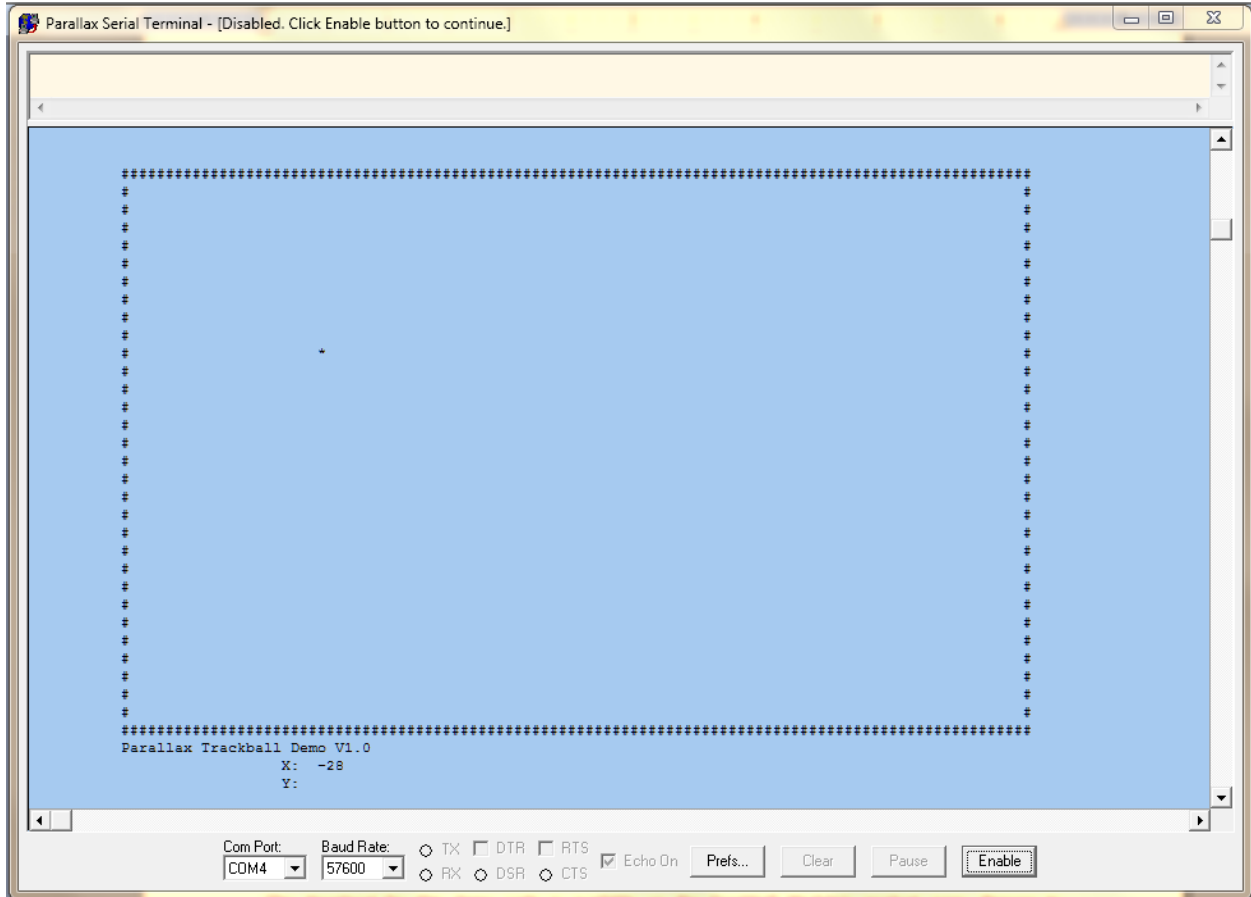
The download for this demo code is available on the Trackball Module's product page. Browse to www.parallax.com and search for 27908.