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## IR Remote (#29122) Spin Demo



**Please note:** This demo was created to support the 2013 National microMedic Contest kits, which are no longer available.

The Infrared Receiver allows your project to decode infrared commands sent to it by a modulated infrared source. In other words, the sensor can read signals sent to it by an infrared TV remote, or other similar source. This demonstration program simply uses the Parallax Serial Terminal program to print codes received by a universal remote programmed to send data on the Sony SIRC infrared protocol.

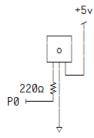
## **Demonstration Part Requirements**

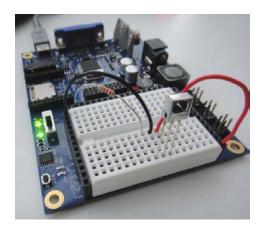
- (1) Propeller Board of Education
- (1) Infrared Receiver
- (1) 220 ohm resistor
- (2) Jumper Wires

## **Connections**

The connection diagram below shows how to connect the infrared receiver to one of the Propeller's I/O pins. The diagram can also be found in the source code file "IR Remote Control DEMO.spin".

=== IR Reciver Connection Diagram ===



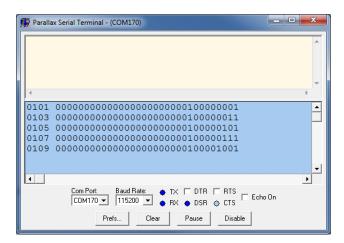


## **Programming**

You will need to program the universal remote control (Parallax Part #020-00001). To do this, hold the "Set Up" key on the remote for several seconds until the red LED on the remote turns on and stays lit. Then enter the code for Sony devices, 605, by pressing the number keys. Once you enter "605", the red LED should turn off. At this point, the universal remote is programmed to emit infrared pulses for Sony devices.

Once you have correctly wired the infrared receiver, download the demonstration program to the Propeller Board of Education. To do this, open the "IR Remote Control DEMO.spin" source code file with the Propeller Tool. To download the program, click Run>>Compile Current>>Load RAM, or press the F10 key on your keyboard.

To see output on the Parallax Serial Terminal, open the Parallax Serial Terminal program, or press F12 on your keyboard. Then, on the Parallax Serial Terminal programs window, select the correct COM port and Baud Rate. The baud rate you select should match the PC\_BAUD setting in the source code; the default baud rate in the source code is 115,200 baud.



In this demo, the Parallax Serial Terminal only displays the raw value of the code it receives. For each line, there are two pieces of information that say the same thing in two different ways - the first number is the hexadecimal value of the code received and the second number is the binary representation of that code. In the screenshot above, the codes listed are the codes received for the "1", "2", "3", "4", and "5" key on the universal remote. Within the **CON** section of the "IR Remote Control DEMO.spin" program, there is a section that enumerates named constants for each button on the remote control.

The infrared receiver can receive information from any infrared source as long as it is modulated on a carrier wave with a frequency of around 38 kHz. If you are crafty, you can write your own Propeller firmware to correctly interpret commands from just about any infrared remote control.