Heart Beat Sensor

This is a heartbeat / pulse / PSO2 sensor based on a Silicon Labs Si1143 chip. The chip wasn't exactly designed for a pulse sensor but it has all the necessary ingredients.. These include variable LED control for three LEDs and two photodiode detectors.  The chip has a boatload of controls for controlling the LED pulsewidth, the LED current and which LEDs are on during which particular measurement. We've got a library for the sketch and demos for Arduino and Processing. We'll get these up in the next day or two.

The board is outfitted with two infrared LEDs and one red LED, for sensing of visible red light. The two frequencies are necessary for sensing and calculating the oxygen saturation in blood. The pinout is made to natively fit a JeeNode but the pins can easily be connected with wires to any 'duino or other microcontroller.

The  pulse sensor, with only slightly tweaked software, also makes an awesome close range (0-8") Infrared proximity detector. Unlike the Sharp Infrared sensors, the SI1143 based sensor has no dead zone close in the output. The current draw is also less than the Sharp sensor, and entirely under user control, through the I2C interface.