



Sensors Expo Demos

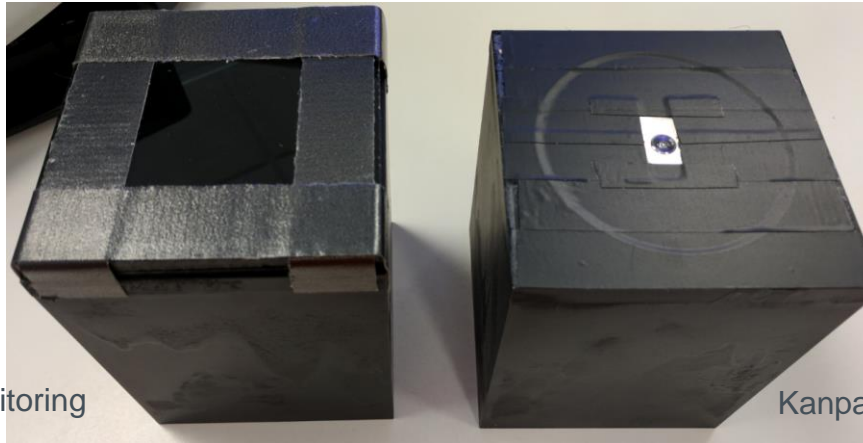
Kanpai + Hidden Light Monitoring Demos

24 July 2017

US-CMS Applications Engineering

Summary

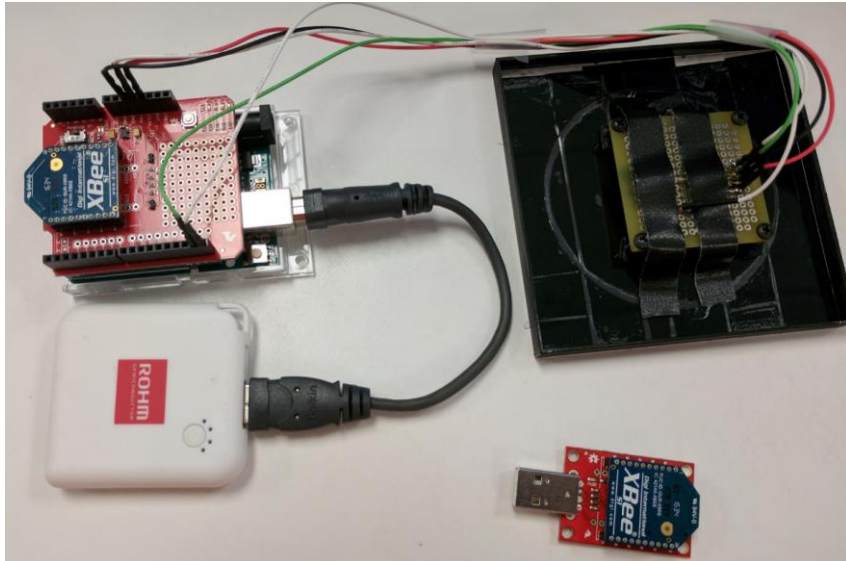
- ***Kanpai Sensor*** : Demo to show how the BH1747 color sensor can identify “colors” of the object that is placed on the platform/coaster. Includes additional white LED with color sensor pairing.
- ***Hidden Light Monitoring Sensor*** : Demo to show how the BH1747 works under 1% lighting conditions. Shows operation as ALS and as a color filter. Only BH1747 behind a 1% transparent glass



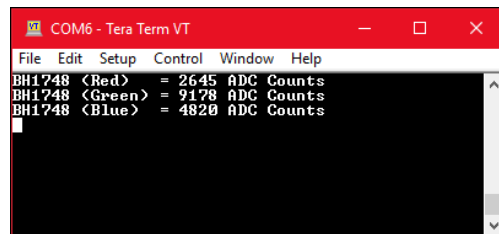
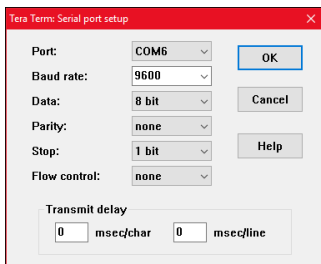
Hidden Light Monitoring

Kanpai Sensor Demo

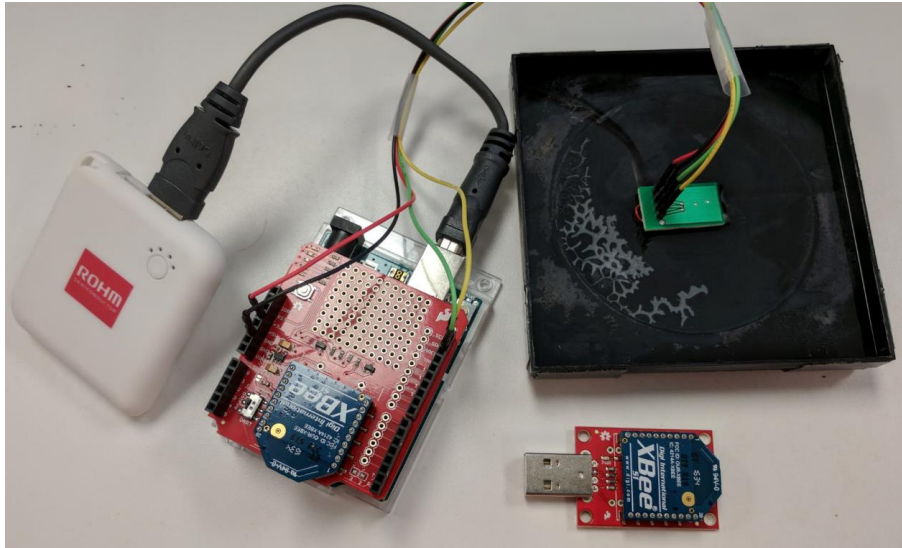
Kanpai Sensor Demo Setup



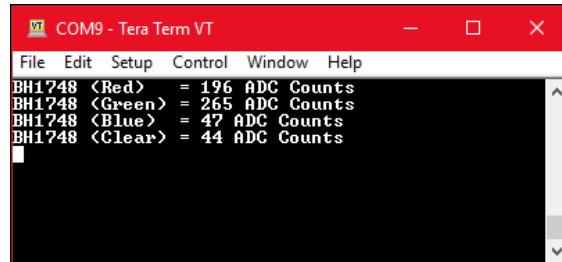
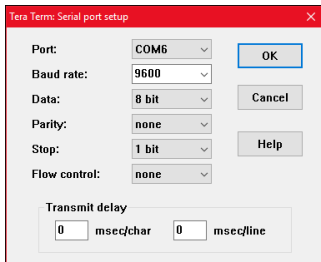
- HW Used:
 - Arduino Uno
 - Xbee Shield
 - Xbee USB Dongle
 - Xbee Transceiver... x2
 - Breakout Board for LED+BH1747
- Explanation:
 - I have setup the Xbee units to only send serial messages to each other. The USB dongle can be connected to a PC to open a COM port. Then will immediately start streaming data
 - Color Sensor is connected as follows:
 - BH1747 Vdd -> Arduino 3.3V
 - BH1747 GND -> Arduino GND
 - BH1747 SDA -> Arduino SDA
 - BH1747 SCL -> Arduino SDL
 - LED is also connected to the 5V source on the Arduino. A standard resistor divider is used to limit current to 5mA.



Hidden Light Monitoring Sensor Demo Setup



- HW Used:
 - Arduino Uno
 - Xbee Shield
 - Xbee USB Dongle
 - Xbee Transceiver... x2
 - Breakout Board for BH1747 only
- Explanation:
 - I have setup the Xbee units to only send serial messages to each other. The USB dongle can be connected to a PC to open a COM port. Then will immediately start streaming data
 - Color Sensor is connected as follows:
 - BH1747 Vdd -> Arduino 3.3V
 - BH1747 GND -> Arduino GND
 - BH1747 SDA -> Arduino SDA
 - BH1747 SCL -> Arduino SDL
 - There is no LED used in this demo, so you will need to use an external light source to properly show the operation of this demo
 - I also added the “clear” ALS return value to help show the ambient light portion of the demo.



- GitHub Repository (Firmware)
 - <https://github.com/ROHMUSDC/SensorExpo2017-Demo-KanpaiandHiddenLight>
- Xbee Helpful links
 - <https://www.digi.com/products/xbee-rf-solutions/2-4-ghz-modules/xbee-zigbee>
 - <https://www.digi.com/products/xbee-rf-solutions/xctu-software/xctu>
- Arduino
 - <https://store.arduino.cc/usa/arduino-uno-rev3>
 - <https://www.arduino.cc/en/Guide/HomePage>
- Tera Term
 - <https://ttssh2.osdn.jp/index.html.en>



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