**Arduino Sensorboard**

* Made by Cai Langstaff and Helen Miles as a project for the Aberystwyth Robotics Club.
* The club meets 3:30-5:30pm every wedsnesday; there are no open spaces at the moment, but there’s contact details on the website: **http://www.aberrobotics.club**
* The sensorboard contains lots of sensors regularly used in robotics, but this lets us show how things can connect together.
* The Arduino does all of the processing. It can only do one thing at a time, so it goes through each sensor one by one to check if something has been activated. This is something we may try to upgrade in future.

**Operation**

1. The board needs to be connected to the power, there’s a plug that detatches
2. The board can be turned on and off at the power supply safely at any time
3. If something goes wrong, you can reset the board by pressing the tiny red button on the Arduino, or just by turning it off and on again at the power supply

**List of Sensors**

|  |  |
| --- | --- |
| **Input** | **Output** |
| Temperature and Humidity | Currently no output – we plan to put a screen on the board in the future |
| Light Blocking | Passive Buzzer plays arpeggio |
| Reed Switch | Flashes RGB LED to left |
| White Button | Hold to activate the 7 Colour Flash (above) |
| Ultrasound | Hold an object in front of the sensor – for distances under ~50cm it will cycle through RGB on the above LED based on the distance of the object |
| IR Blocking | Contains an emitter and receiver both pointing upwards on the sensor chip – putting your hand in front of the two sensors activates the 2 colour LED to the right |
| Microphone | Tap for short Active Buzzer tone |
| Rotary Encoder | Every turn/button press flashes the dragon |
| IR Emitter and Receiver | Flash the RGB LED. You have to block the light then unblock it – the switch will activate after the unblock action |
| Touch | Flash the RGB LED |
| Radio Receiver | Press A and B on the remote to turn the Red/Cyan |
| Light-Dependant Resistor (LDR) | Currently no output because it’s not giving us sensible numbers, this will be fixed in future. |
| Ball Switch | Move side to side to flash the 2 LEDs above |
| Mini Reed Switch | Wave magnet over it to gradually light the Dragon |
| Joystick | Cyan Red LED: up/down and left/right turns on the cyan and red LEDs, press to flash green LED |
| Button | Turns on all of the LEDS |