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