

Mindwave Brain Sensor

Introduction

This sensor is a headband/headset that puts a sensor on the users forehead, right above the left eye and has a clip that clips to the ear lobe. The forehead sensor receives the actual reading while the clip acts as a ground.

Source

<http://store.neurosky.com/products/brainwave-starter-kit>

\$100

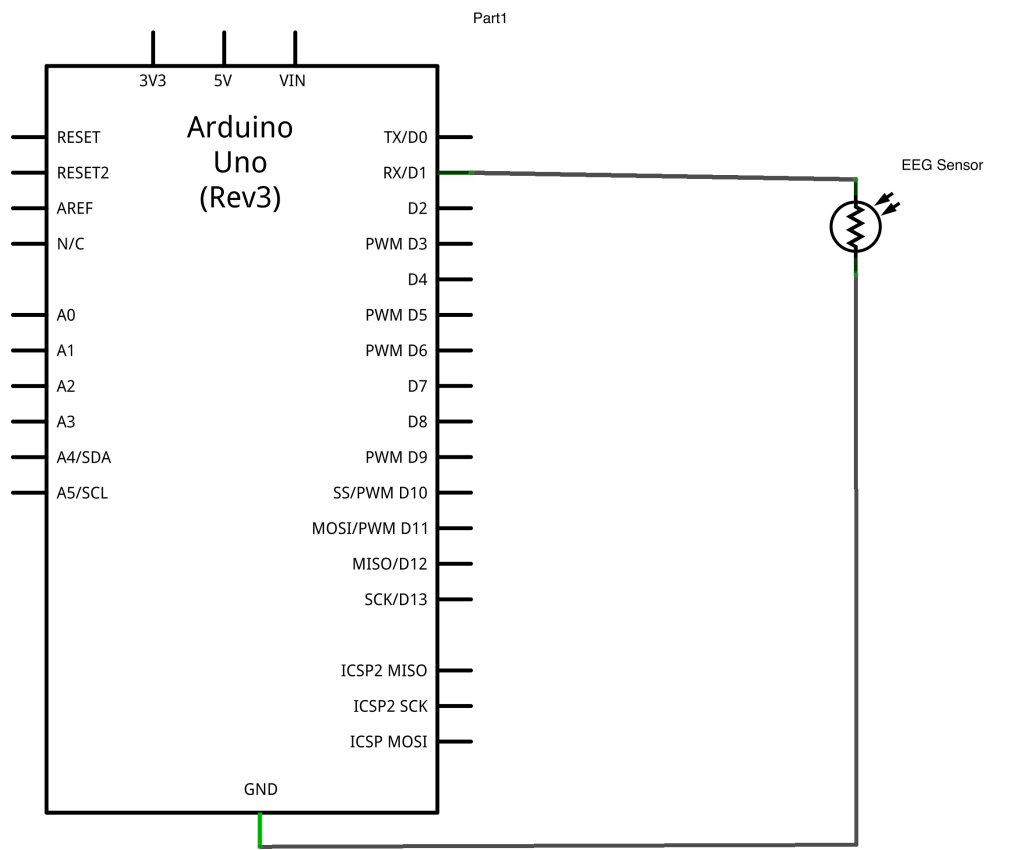
Applications

Mind controlled nerf gun <http://hex-machina.com/hw/mindbullets>

Mental Instrument <http://makezine.com/2010/05/17/mental-note-an-eeeg-musical-instrume/>

Truth Meter <http://makezine.com/2011/05/10/behind-the-brain-blinker/>

Microcontroller Connection



Code Example

```

for (int i = 0; i < incomingValues.length; i++) {
    int newValue = Integer.parseInt(incomingValues[i].trim());
    // Zero the EEG power values if we don't have a signal.
    // Can be useful to leave them in for development.
    // if ((Integer.parseInt(incomingValues[0]) == 200) && (i > 2)) newValue = 0;
    //if (i == 0 ) sinal = newValue;
    if (i == 1 ) raciocinio = newValue;
    if (i == 2 ) meditacao = newValue;
    if (i == 3 ) delta = newValue;
    if (i == 4 ) theta = newValue;
    if (i == 5 ){
        int newMed = newValue;
        for(int m=0;m<10-1;m++)
        {
            avgBuffer[m]=avgBuffer[m+1];
        }
        avgBuffer[9]=newMed;

        int sum=0;
        for(int m=0;m<10;m++){
            sum+=avgBuffer[m];
        }
        lowalpha=sum/10;
    }

    if (i == 6 ) highalpha = newValue;
    if (i == 7 ) lowbeta = newValue;
    if (i == 8 ) {int newMed = newValue;
    if (i == 9 ) lowgama = newValue;
    if (i == 10 ) highgama = newValue;

        println(raciocinio + "," + meditacao + "," + delta + "," + theta + "," + lowalpha + "," + highalpha + "," + lowbeta +
        "," + highbeta + "," + lowgama + "," + highgama);
    }
}

```

Typical Behavior

The data is so uneven that it takes several data smoothing arrays to make it usable. So you may see something like 800,45000,700,540000 all after each other.

Personal Application

There are plenty of possible applications. Some of its main uses currently are for gaming. Different neuro-cognitive therapists have also been experimenting with the technology recently for use in therapeutic practices. I personally see a vast future for brain sensors that I think someday will permeate a majority of our interactions with technology.

References

<http://frontiernerds.com/brain-hack>