

A word of warning :

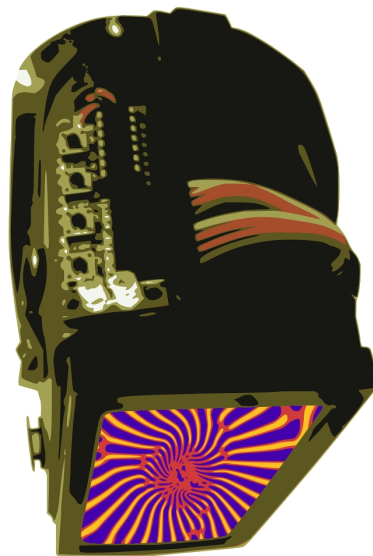
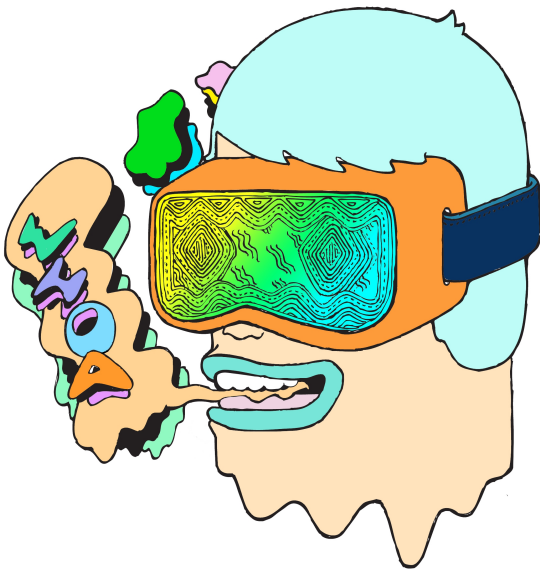
THE VISOR IS NOT FOR EVERYONE. **SOME PEOPLE HAVE A FROM OF EPILEPSY THAT CAN BE TRIGGERED BY FLICKERING LIGHTS. DO NOT USE THE VISOR IF YOU HAVE PHOTOSENSITIVE EPILEPSY.**

Whats going on here?

Many people see geometric patterns when looking at flickering lights. The patterns depend on the frequency, color, and intensity of the flickering. People report seeing similar shapes, which are common in visual hallucinations and are called “form constants”. Flicker hallucinations are best induced using a totally immersive and uniform visual stimulation called a ganzfeld, which is German for “entire field”. Although the Visor is not a complete ganzfeld, it is immersive enough to demonstrate the flicker hallucination effect. The Visor has been carefully programmed and tuned to display a wide range of colorful patterns, allowing you to experience how geometric visual hallucinations change with frequency and color.

How does it work?

Flickering lights confuse the eye and the brain, causing them to misinterpret what they’re seeing. One hypothesis is that the flickering interacts with natural ongoing oscillations in visual cortex, exciting a specific frequency of brain waves. This increases the activity in visual cortex enough to overload the circuitry the brain uses for interpreting what it sees, causing you to see things that aren’t really there. One model has shown that flickering lights can cause visual cortex to behave like a ‘reaction diffusion system’, which is a type of system that spontaneously forms patterns. The most famous examples of biological reaction-diffusion systems are the patterns in animal fur, like leopard spots and zebra stripes. Some common geometric visual hallucinations induced in flicker hallucinations include stripes, checkerboards, hexagons, circles, and spirals. For a more detailed background, as well as a hypothetical mathematical model of the flicker hallucination effect, visit the publication linked at is.gd/qvMFol.



Assembly:

Assembly instructions are hosted online at treehovse.blogspot.com or is.gd/u5BvNb. *Note that's treehovse with a 'v' instead of a 'u'.* Visit this website to learn how to build your Visor kit.

In this parts bundle should be :

- 1 visor outer panel with quasicrystal design
- 1 visor middle panel with LED placement markings
- 1 visor inner panel with cutaway for wires
- 1 2xAAA battery pack
- 1 Visor controller printed circuit board
- 1 pre-programmed AtTiny24 microcontroller chip
- 1 14 pin DIP chip socket
- 1 8-pin right angle male header
- 2 4-pin female jumper cables
- 2 RGB LEDs
- 1 Blue LED
- 1 Ultraviolet LED
- 2 68Ω resistors
- 1 10KΩ resistor
- 4 tactile switches
- 1 toggle power switch
- 1 4" to 6" length of 22 gauge wire



Along with your parts bundle, you should also have received one pair of welding goggles.

You will also need these tools and materials, not included in the kit :

- A hot glue gun and hot glue sticks
- A soldering iron and solder
- Wire cutters
- X-acto knife or hobby knife
- optionally : super glue

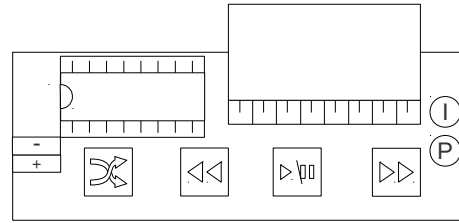
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Experiment !





Once you have constructed the Visor, try drawing what you see, and comparing the experience with a friend. Start to experiment. Do different people see the same things? Does the experience seem to change when you are more alert, or more tired, or with open or closed eyes? Do you see the same patterns on the same presets across different days? If all of that gets too serious, the Visor also makes an excellent costume addition for partying, or simply creating a spectacle.

Usage Instructions:

Here is a cartoon of the board :





The buttons are as follows, from left to right :

-  Shuffle lights if playing, skip to random if paused
-  Skip to the previous light patch
-  Play/Pause: toggles automatic playback
-  Skip to the next light patch

When first turned on, the goggles are paused at the first patch.

- Press play/pause to begin the light sequence.
- Press forward and back to move through the light patches.
- Press shuffle to skip to a random patch when paused, or turn on randomized playback while playing.

The LEDs indicate :

-  is on if playing, flashing if playing with shuffle
-  power LED is on if powered on.

When the goggles are paused, the indicator light will be off. When the goggles are playing, the indicator light will be on. When the goggles are playing back in a random order, the indicator light will be flashing.

The light program loops around to the beginning once it has reached the end. There are 120 patches.

When the batteries begin to die, the color balance will shift. In particular, the red channel will become dim. The goggles will continue to operate with low batteries, although the colors will change slightly. When the batteries get low enough, you may experience unpredictable behavior, such as random restarts. There goggles are not damaged from running with low batteries, but you should replace dying batteries when possible for optimal performance.