



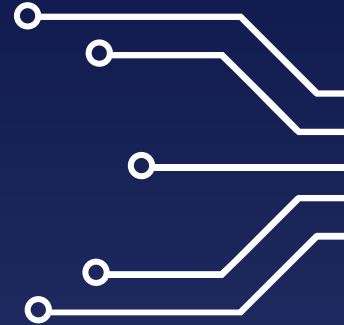
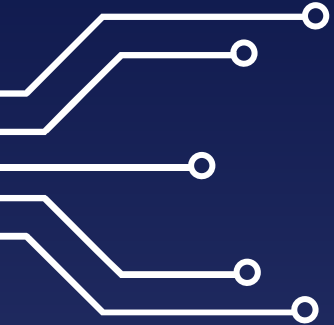
Reverse Engineering a Gaming Headset

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Introduction

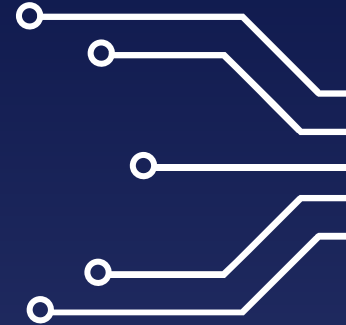
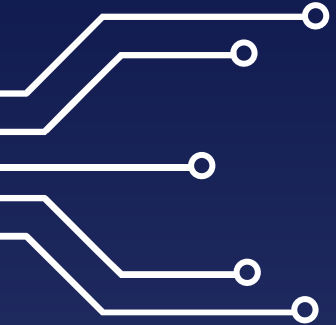


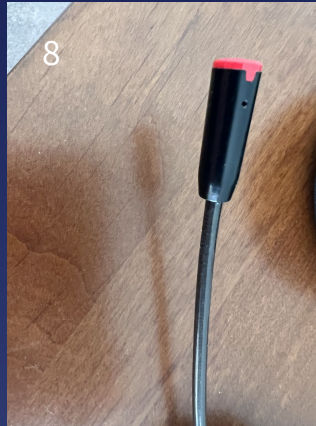
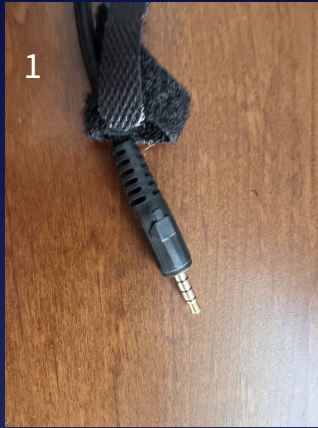
Why a headset?

- Masacegon Headset
- We chose a headset to reverse engineer to find out the inner workings of its mechanisms
- People use this device commonly without knowing how it works
- This simple but unique electronic is what makes our lives more efficient at work and at home




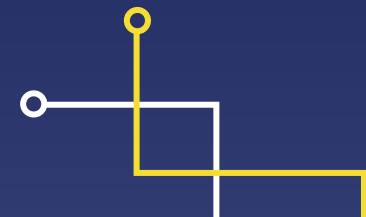
Components







Components List

1. Plug
 2. Drivers & Casing
 3. Motherboard
 4. Ear Pad
 5. Headband
 6. Slider
 7. Screws
 8. Microphone
 9. Microphone on and off switch
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Plug

- The plug allows the headset to be connected to the device that it outputting the audio.
- E.g.(phone, computer, etc.)
- This part is crucial for connecting the audio output so you can hear the audio.



Drivers and Casing

- The drivers are another important part of a headset because they convert the audio output coming into your headset in the form of electrical signals to actual sound.
- The way it does this is by using the magnetic field to activate the diaphragm to make sound waves



Motherboard

- The motherboard is what connects all the electrical components together
- This component is like the string that ties everything together and makes the headset one complete device



Ear Pad

- The ear pads help the user wear the headphones comfortably without any discomfort.
- The ear pads also influence the sound quality.



Headband

- The headband secures the headphone around the user's head.
- It keeps the headphone from falling from their ears. It from one ear over the head to the other ear.



Slider

- A slider in a headphone is important to fit all users' heads.
- You can use the slider to adjust the amount of spacing you would need to comfortably fit your ears.



Screws

- The screws help all the parts of the headphones stay together.
- It keeps it from falling over and keeps all the parts tight in the correct position.



Microphone

- A microphone is used to communicate with people in a call or in video games.
- It works by sensing sound and translate it to equivalent electrical energy. Then it is sent to a speaker or another person's headphone to project the sound.

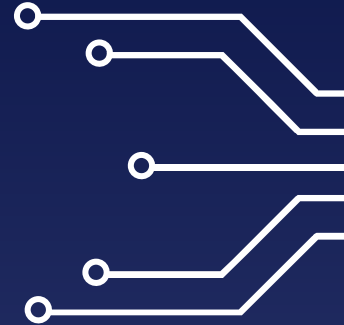
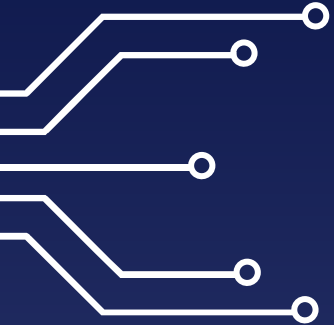


Microphone on and off switch

- This switch is installed into one of the ear's casing.
- This switch allows the user to allow the microphone to sense sound or not.
- If it is off then the sound would not be projected, if it is on then it will be projected to a speaker or another person's headphone.




Conclusion





Lessons Learned

- We overlook common household items to other more sophisticated devices, but these everyday devices we use have complicated mechanisms that we could learn from.
 - By learning more about these devices we can understand that they are not primitive, but very complex.
 - Hundreds of hours of research goes into making these complicated mechanisms work together for us to use in our everyday lives.
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