

# Reverse Engineering Online Challenge Summary Report

## Live Stream Audio Interface V8



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## Table of Content

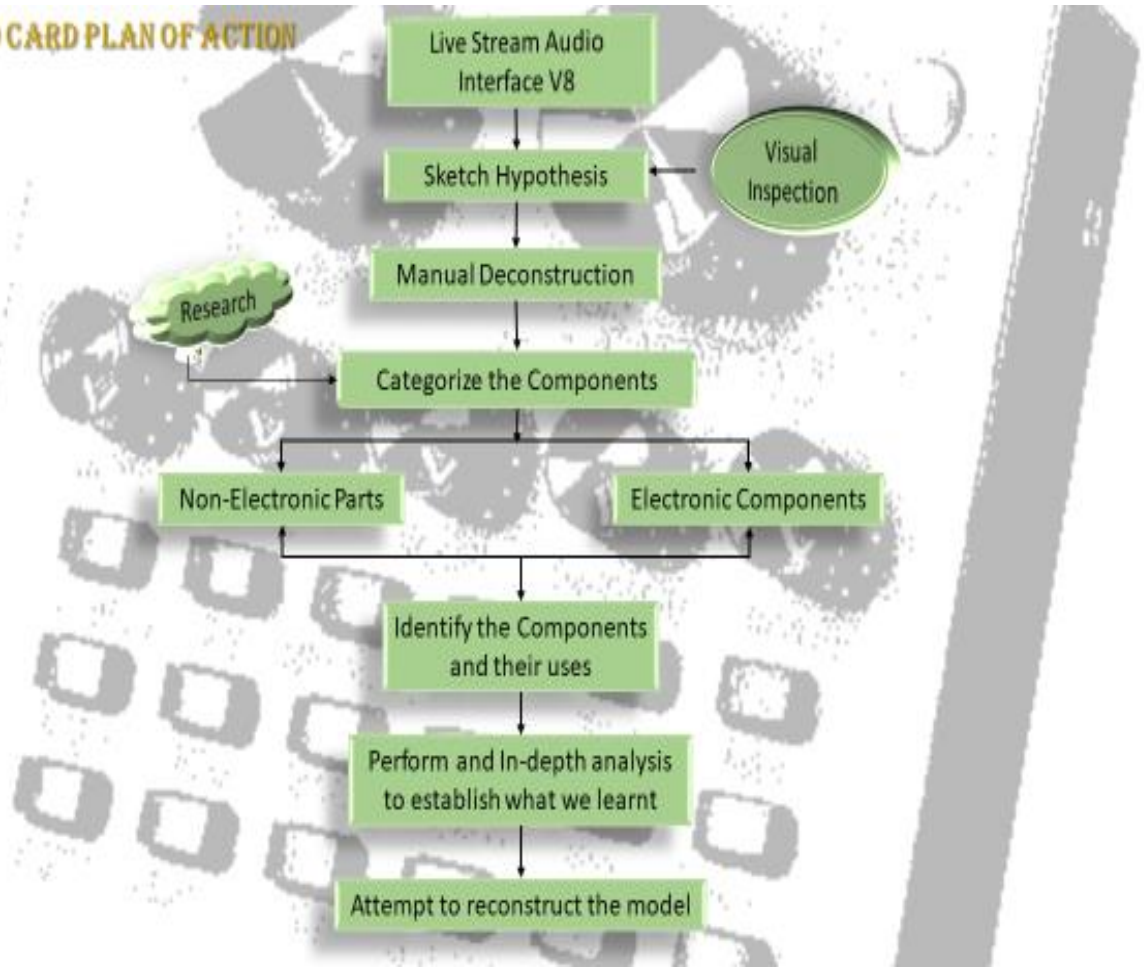
1. INTRODUCTION .....	3
2. PLAN OF ACTION.....	4
3. DISASSEMBLY .....	5
4. DEVICE COMPONENTS .....	6
4.1 Non-electronic Components.....	7
4.2 Electric Components .....	9
4.2.1 V8 Sound Card Motherboard.....	9
4.2.2 Motherboard Components .....	10
5. FINDINGS.....	12
6. CONCLUSIONS AND LESSONS LEARNT .....	13
6.1 Lessons Learnt.....	13
6.2 Conclusion.....	13
7. REFERENCES .....	14

# 1. INTRODUCTION

In the dynamic world of audio production, where precision and versatility are paramount, the Live Sound Card V8 stands as a technological cornerstone. This electronic device serves as a linchpin for musicians, pod casters, and sound engineers, offering a sophisticated platform for controlling and enhancing audio inputs and outputs during live performances or recordings. In this exploration, we delve into the inner workings of the Live Sound Card V8, unraveling the complexities of its design, identifying key components, and shedding light on the pivotal roles each element plays in delivering a seamless and enriched audio experience. This journey will not only illuminate the technical aspects of the device but also underscore the broader implications of its integration into the evolving landscape of audio technology. As we navigate through the layers of this electronic marvel, our aim is to unveil the synergy of components that transforms the Live Sound Card V8 into a catalyst for sonic excellence.

## 2. PLAN OF ACTION

### V8 SOUND CARD PLAN OF ACTION



### 3. DISASSEMBLY



Figure 1: Sound Card before Disassembly



Figure 2: V8 Sound Card without the top

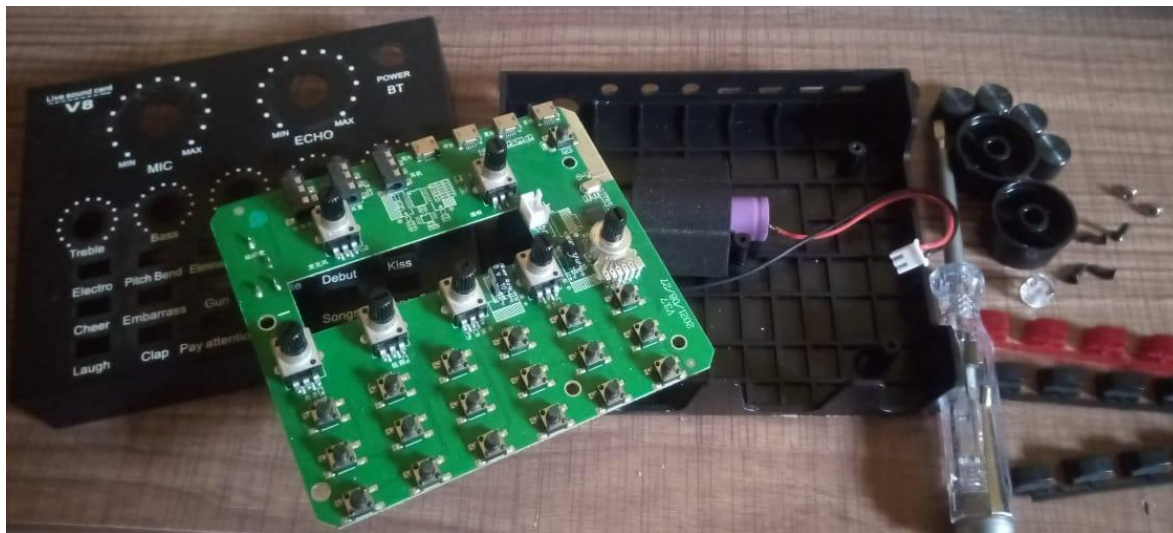
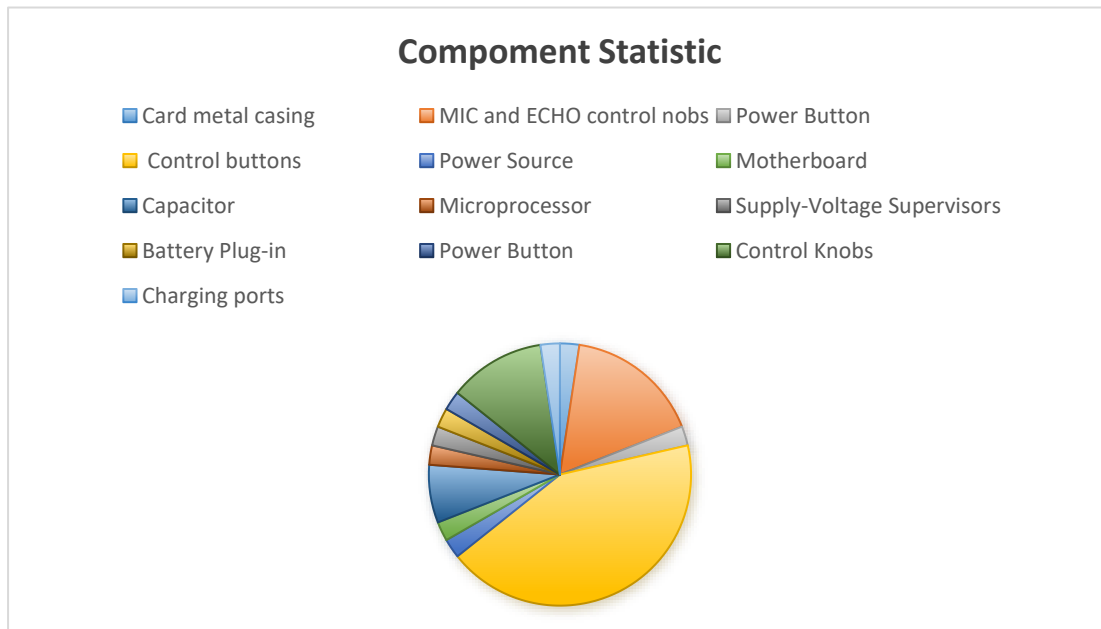


Figure 3: Disassembled V8 Sound Card

## 4. DEVICE COMPONENTS

Component name	Count
Card metal casing	1
MIC and ECHO control nobs	7
Power Button	1
Control buttons	18
Power Source	1
Motherboard	1
Capacitor	3
Microprocessor	1
Supply-Voltage Supervisors	1
Battery Plug-in	1
Power Button	1
Control Knobs	5
Charging ports	1





## 4.1 Non-electronic Components

Device Component	Photo
<p>V8 Sound Card metal casing (Shields, protects, dissipates heat, enhances aesthetics)</p>	
<p>MIC and ECHO control knobs (Adjust audio input and feedback)</p>	
<p>Power Button (Activates or deactivates electronic device with a single press)</p>	
<p>Other Control buttons (Have different functions but they are all used for audio clarity)</p>	

**Power Source**  
 (Provides energy for device operation; examples include batteries or electrical outlets)

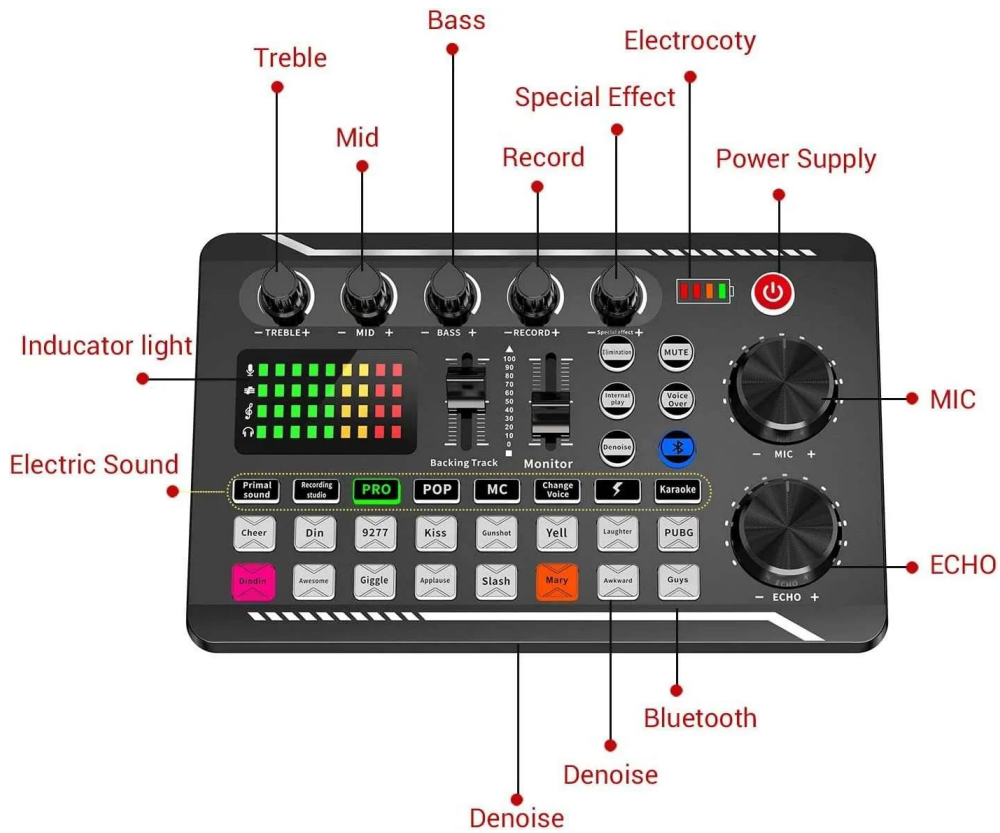
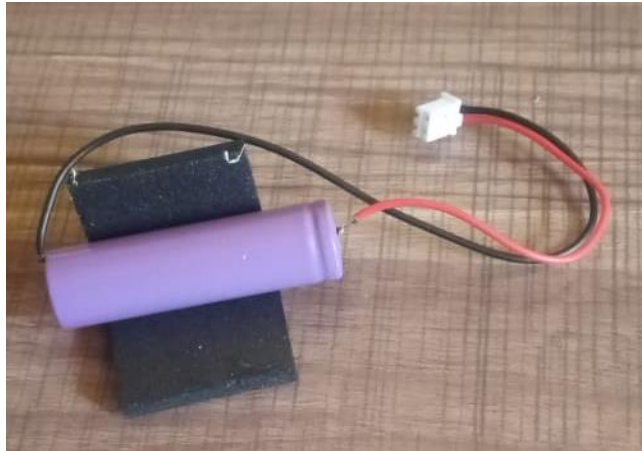


Figure 4: Summary of External Components



## 4.2 Electric Components

Electronic components are fundamental building blocks that form the backbone of electronic devices, enabling them to perform various functions. These components manipulate electric signals, facilitating tasks ranging from amplification to signal processing.

### 4.2.1 V8 Sound Card Motherboard



Figure 5: Top face of the motherboard

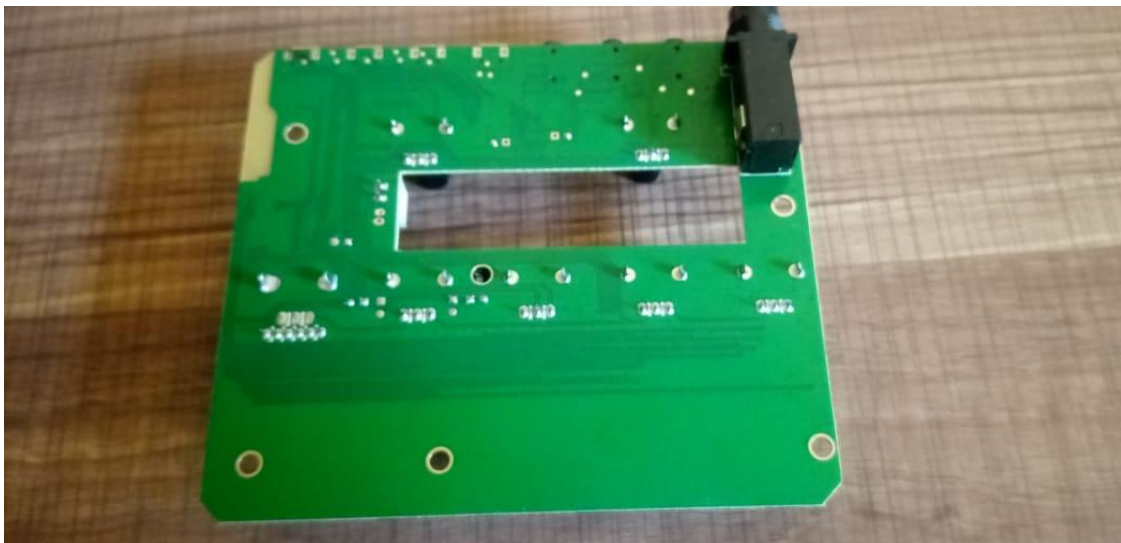






Figure 6: Bottom face of the circuit motherboard

## 4.2.2 Motherboard Components

Part Description	Image
<p><b>Capacitor</b></p> <ul style="list-style-type: none"><li>- The primary function of capacitors is for storing and releasing electrical energy in a circuit.</li></ul>	
<p><b>Microprocessor</b></p> <ul style="list-style-type: none"><li>- It's a silicon chip containing millions or billions of transistors, integrated circuits, and other components that perform various functions, including data processing, arithmetic calculations, and control tasks.</li></ul>	
<p><b>Supply-Voltage Supervisors</b></p> <ul style="list-style-type: none"><li>- Supply voltage supervisors are crucial for ensuring the robustness and reliability of electronic systems, protecting against voltage fluctuations and disturbances.</li></ul>	
<p><b>Battery Plug-in</b></p> <ul style="list-style-type: none"><li>- Provides the activation energy or power necessary to start the device operation.</li></ul>	

### Power Button

- A power button, also known as a power switch or on/off button, is a physical or virtual control that initiates or terminates the electrical power supply to a device.



### Control Knobs

- Control knobs serve as vital components for adjusting audio parameters and shaping the sound output



### Charging ports

- It is a crucial component on electronic devices that facilitates the connection between the device and an external power source for charging



## 5. FINDINGS

The figure below provides an overview of the typical components and their interconnections in a Live Sound Card V8. From the circuit system, it is evident that the Live Sound Card V8 exhibits versatility with its array of inputs, accommodating various audio sources and ensuring compatibility across different equipment.

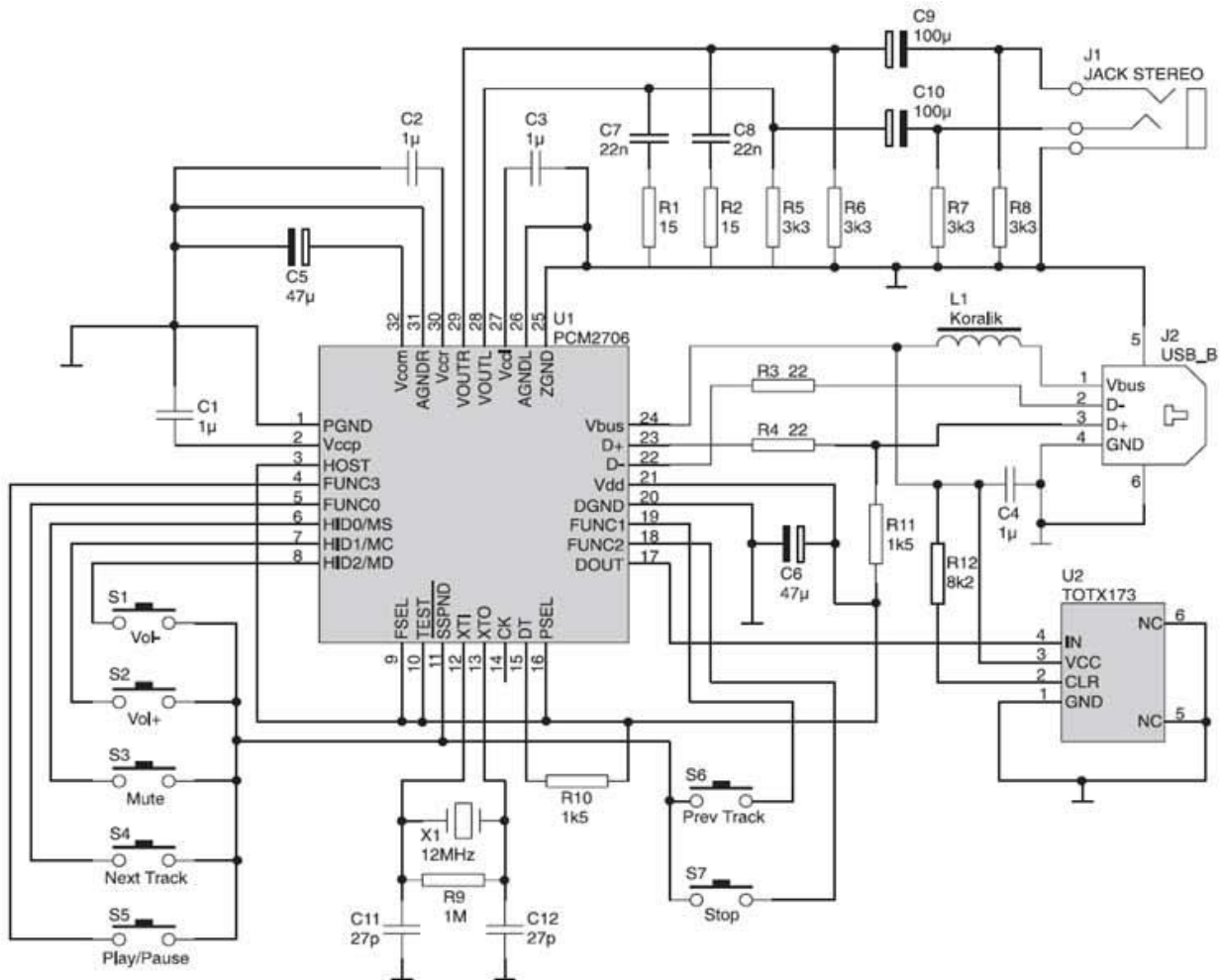


Figure 7: V8 Sound Card circuit system

## **6. CONCLUSIONS AND LESSONS LEARNT**

### **6.1 Lessons Learned**

From the process, it is evident that:

1. The main processing chip emerges as the central orchestrator, seamlessly transforming analog signals and managing signal processing and routing.
2. Safety protocols, especially around capacitors, highlight the necessity for cautious exploration and meticulous calibration to ensure optimal sound quality.
3. The delicate balance between analog warmth and digital precision becomes evident, displaying the device's seamless fusion of technologies.
4. Usercentric design, exemplified by intuitive controls like knobs and LED displays, enhances the overall user experience and interface.

### **6.2 Conclusion**

In conclusion, the Live Sound Card V8 transcends being a mere device; it embodies a harmonious fusion of technology and artistry. The exploration not only demystified its inner workings but also provided valuable insights into the intricate craftsmanship and engineering excellence that define the world of audio technology. As the curtain falls on this exploration, the echoes of lessons learned resonate, leaving a lasting appreciation for the craftsmanship that orchestrates the melodies of our sonic experiences.

## 7. REFERENCES

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