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# The Ear Tool



**Model: ET-1 Kit  
Revision 1.3**



## - Package Contents -

- 1 – Enclosure
- 1 – The Ear Tool v1.3 PCB
- 1 – 9v Battery Clip
- 1 – 8Ω 1W Speaker
- 1 – 220uF Electrolytic Capacitor
- 1 – 4.7uF 0805 Ceramic Capacitor
- 1 – 10kΩ 0805 Resistor
- 1 – 100kΩ 0805 Resistor
- 1 – LM386 Amplifier IC
- 1 – 10kΩ Potentiometer
- 3 – 2p Slide Switch
- 1 – 3.5mm Headphone Jack
- 1 – 5mm Blue LED
- 1 – 2 Pin Terminal Connector
- 1 – 100mH Inductor
- 2 – Battery Compartment Separator
- 1 – Adhesive Fabric

**Note: 9V battery not included.**

## - Usage -

The Ear tool can be used to detect almost any electromagnetic interference coming from your electronics such as a power supply, transformer, CPU, microcontroller, wireless transmitter, relays, switches, speakers, transducers, transistors and more. At Harbin Repairs we use the Ear Tool to diagnose problems with computer motherboards, cellphones, and televisions by pointing the tool at different parts of a circuit board and listening to the high frequency pulsing coming from different components. For example, this can help us determine if a CPU or microcontroller is doing any processing or if it's just sitting there burning up because there's a short somewhere. It can also let us know if a cellphone or other device is turning on even if there's no sign of life on the screen or lights. The tool can also be used to discover the different noises your electronics make when they are doing different things (e.g. standby mode vs. fully powered on). For the controls, the gain switch adjusts between high and low sensor gain and the full scope switch is used to help clear up some of the background noise. More information and assembly guide video can be found here:  
[github.com/harbinrepairs/the-ear-tool](https://github.com/harbinrepairs/the-ear-tool)

## - Diagram -

