



PIZZABite: Hands-Free Probing

Abstract

In practical electronics work, one of the most underestimated challenges is simply holding things in place. Whether you are reverse-engineering a device, probing a PCB, flashing a microcontroller, or injecting signals into a circuit, you often need a stable, repeatable, and electrically safe way to connect test leads. This is exactly the problem that PIZZABite aims to solve.

- <https://github.com/whid-injector/PIZZABite>



Figure 1

1 Introduction

PIZZABite is designed to make hardware analysis, debugging, and signal injection more controlled and reliable. Despite its playful name, it addresses a very real need in the hardware-firmware community: a compact, configurable, and mechanically stable interface between your tools and the target device



Figure 2

2 BOM

PIZZABite is composed of:

- flexible metal arm
- powerful magnet
- PCB
- PogoPin
- Header connectors
- Screw

2.1 Flexible metal arm

The flexible metal arm provides positional stability and adjustability. It allows the user to precisely position the probe over the target PCB and maintain firm contact without needing to hold it manually.

2.2 Magnet

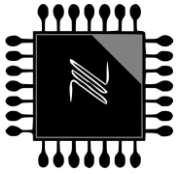
The magnet anchors the arm to any ferromagnetic surface, ensuring a stable base. This prevents movement during testing and allows hands-free operation.

2.3 PCB

The PCB acts as the interface board: routes signals from the PogoPin to headers.

2.4 PogoPin

The PogoPin is the spring-loaded contact probe. Its role is to make reliable, temporary electrical contact with pads, vias, or test points on the DUT (Device Under Test) without soldering.



DOCUMENTATION

PIZZABITE: HANDS FREE PROBING

N0005AN001R001

Revision 1.0

2.5 Header connector

The header connector provides a standardized interface to external equipment. It ensures quick connection and modularity.

2.6 Screw

The screw mechanically secures the PCB to the arm, ensuring rigidity and alignment.



Figure 3

3 How to Use the PIZZABite ?

When using the PIZZABite, position the flexible metal arm so that it forms an angle of approximately 45°, as shown in the photo.

This angle provides the best balance between downward pressure on the PogoPin and lateral stability of the arm.

Once the arm is set, place the magnet on a metal surface to secure the base, then align the PogoPin with the desired test point on the target PCB.

The header connector can then be used to route the signal to measurement instruments or automated test equipment, enabling stable, hands-free probing during debugging and validation activities.

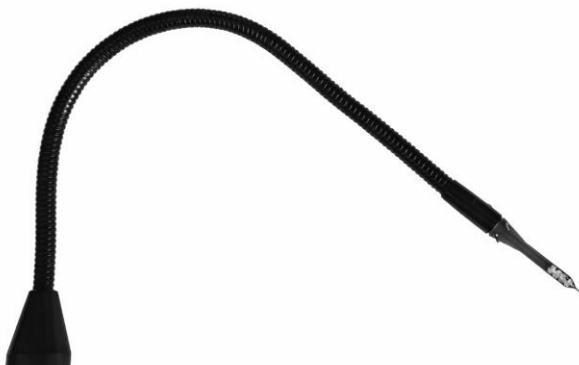


Figure 4

4 Advantages of PIZZABite

- Hands-free probing & Precise positioning
- Modular interface — The header connector makes it easy to route signals to oscilloscopes, logic analyzers, MCUs, or automated test setups.
- Non-destructive contact — The PogoPin provides temporary electrical contact without soldering, ideal for prototypes and sensitive boards.
- Improved workflow efficiency — Speeds up debugging, validation, and repetitive test sequences.

5 Disadvantages of PIZZABite

- Requires a metal surface — The magnetic base needs a ferromagnetic surface; otherwise, an additional metal plate is required.
- Limited force — The PogoPin pressure is suitable for test pads but not for connectors or components requiring higher mechanical engagement.
- Single-point probing — Each PIZZABite handles one test point; multiple units are needed for multi-signal setups.
- Manual positioning — Although precise, positioning still depends on the operator and may require fine adjustments.
- Potential vibration sensitivity — Strong vibrations or accidental bumps can slightly shift the arm if not anchored firmly.
- Not ideal for high-frequency probing — PogoPins and long flexible arms may introduce parasitics that affect very high-speed signals.

Acknowledgements

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References

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