

# PINWOODFER

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**Take your time, follow the instructions, relax, and enjoy yourself!**

**WARNINGS: Perform installation with your pinball machine turned off and unplugged from AC power.**



**Spike**

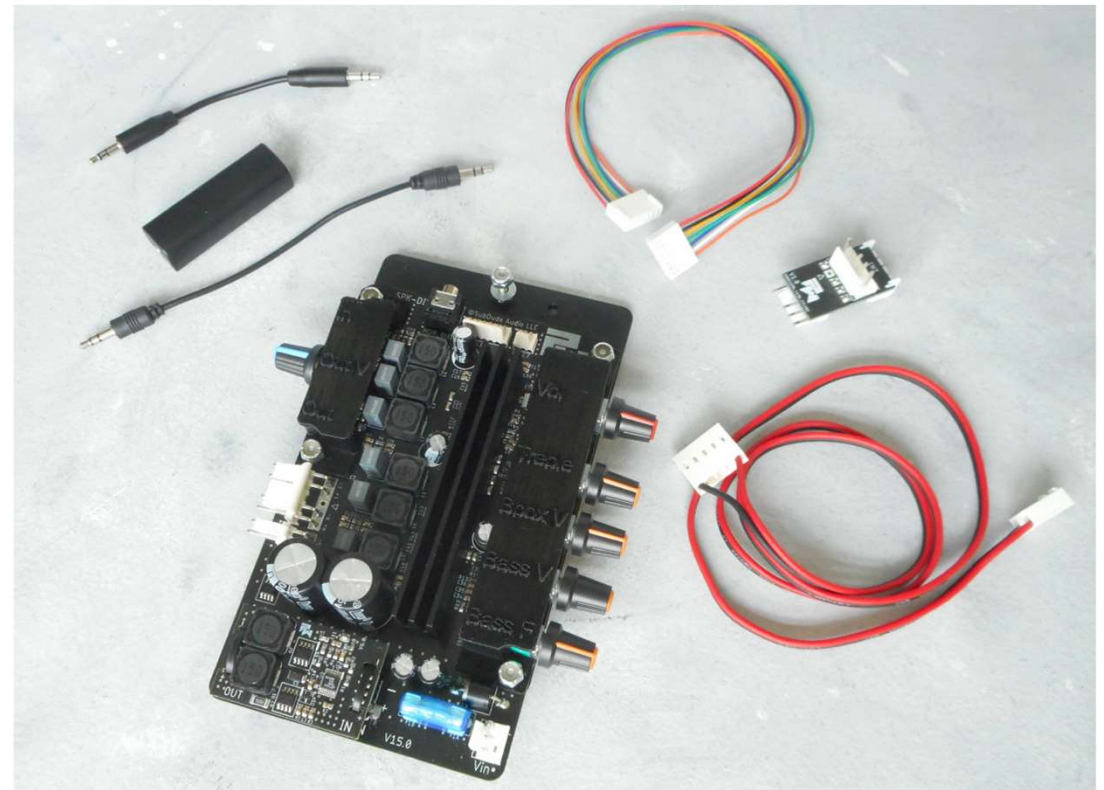
**DIY Amplifier Installation Instructions**

**Installation Video:**

<https://www.youtube.com/watch?v=3jDXP2lscO4>

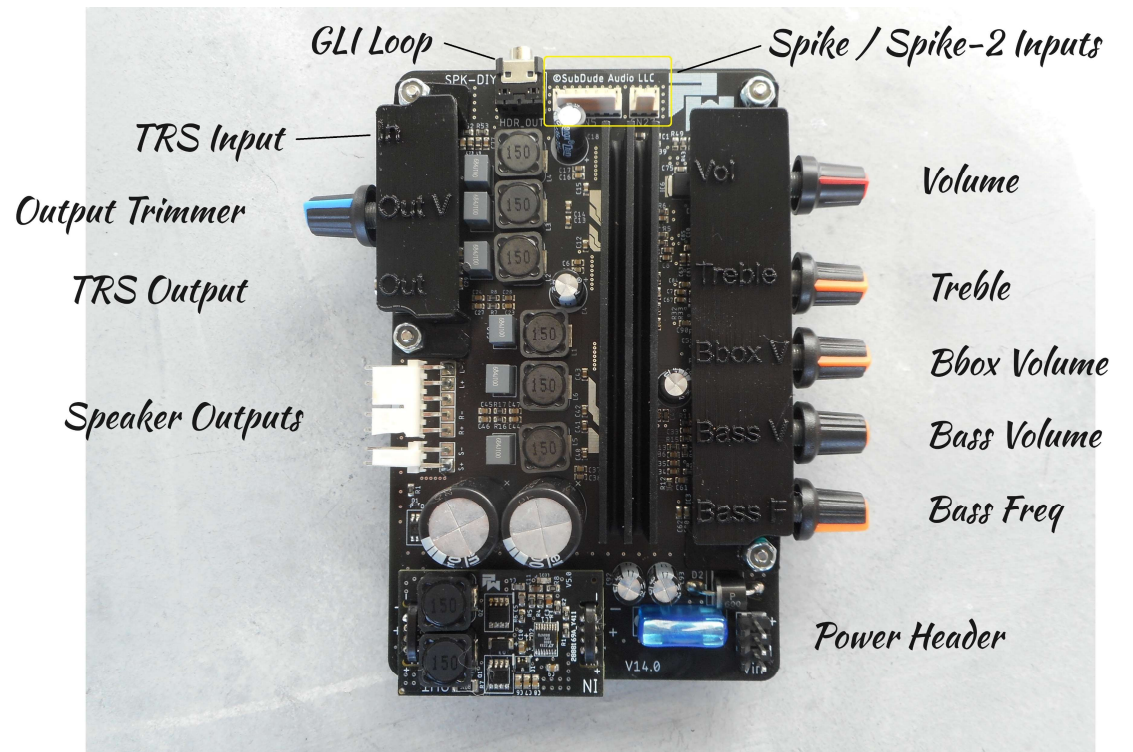
# PinWoofers™ Spike & Spike-2 DIY Amplifier

Shown is the PinWoofers Spike DIY Amplifier and Wiring Accessories.



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# PinWoofers™ Spike & Spike-2 DIY Amplifier Controls



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# Spike & Spike-2 Titles List

Using the table at the right, determine if your title is a:

- A. Spike (a.k.a. "Spike-1")
- B. Spike-2

| Spike Titles    |              |
|-----------------|--------------|
| Game of Thrones | Primus       |
| Ghostbusters    | Supreme      |
| Heavy Metal     | Wrestlemania |
| KISS            |              |

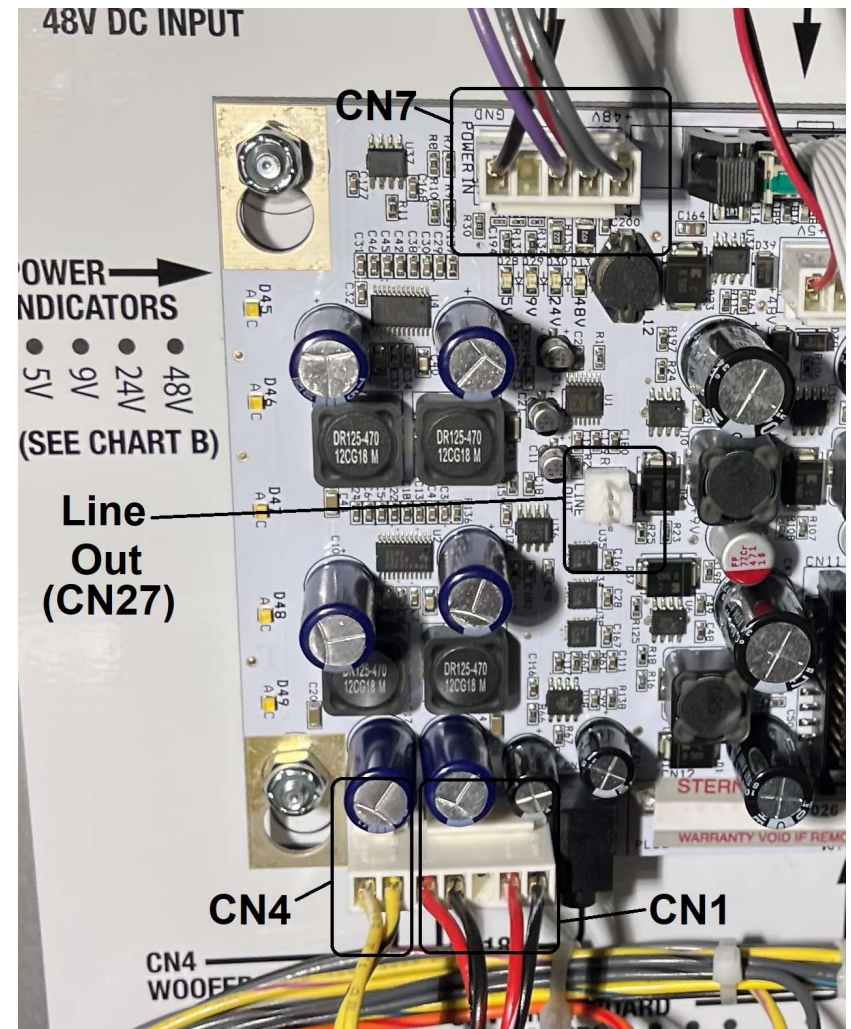
| Spike-2 Titles                  |                              |
|---------------------------------|------------------------------|
| Aerosmith                       | Jurassic Park                |
| Avengers Infinity Quest         | Led Zeppelin                 |
| Batman 66                       | Rush                         |
| Black Knight Sword of Rage      | Star Wars                    |
| Deadpool                        | Stranger Things              |
| Elvira's House of Horrors       | Teenage mutant Ninja Turtles |
| Godzilla                        | The Beatles                  |
| Guardians of the Galaxy         | The Mandalorian              |
| Iron Maiden Legacy of the Beast | The Munsters                 |
| Jaws                            | Venom                        |
| James Bond 007                  |                              |



# Spike CPU Node Board – Header Overview

Familiarize yourself with the headers required for the DIY Amplifier connection:

- CN1 – Backbox Speaker Header
- CN4 – Cabinet Speaker Header
- Line Out (CN27) – Line Out Header
- CN7 – Power Header



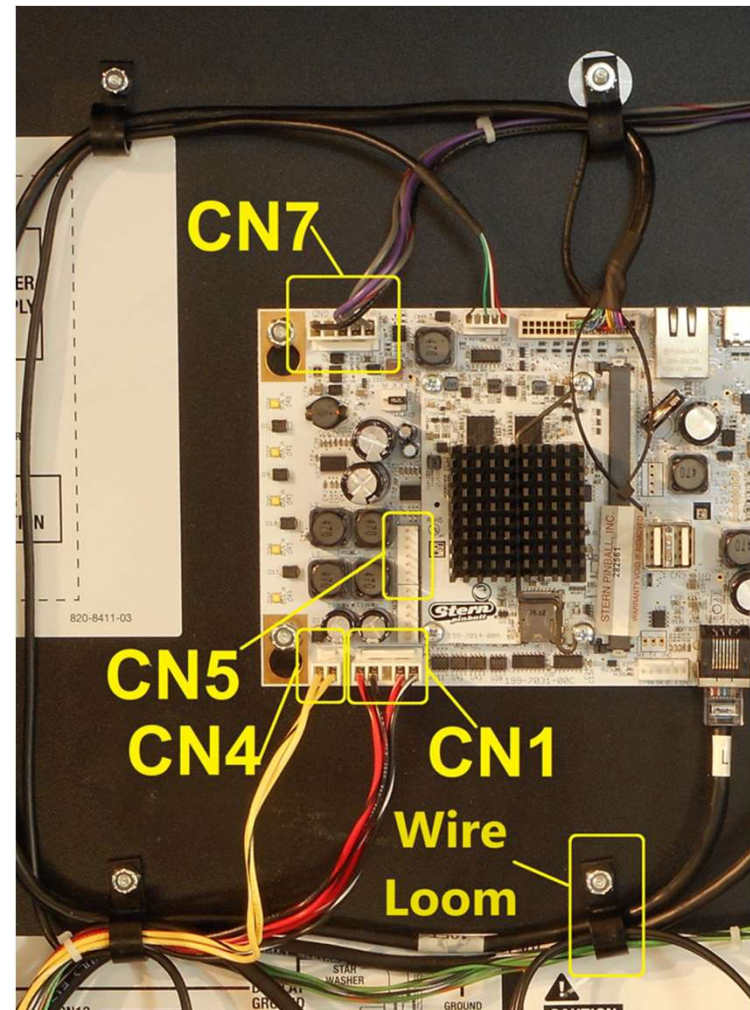
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# Spike-2 CPU Node Board Overview

Familiarize yourself with the headers required for the DIY Amplifier connection:

- CN1 – Backbox Speaker Header
- CN4 – Cabinet Speaker Header
- CN5 – Line IO Header
- CN7 – Power Header

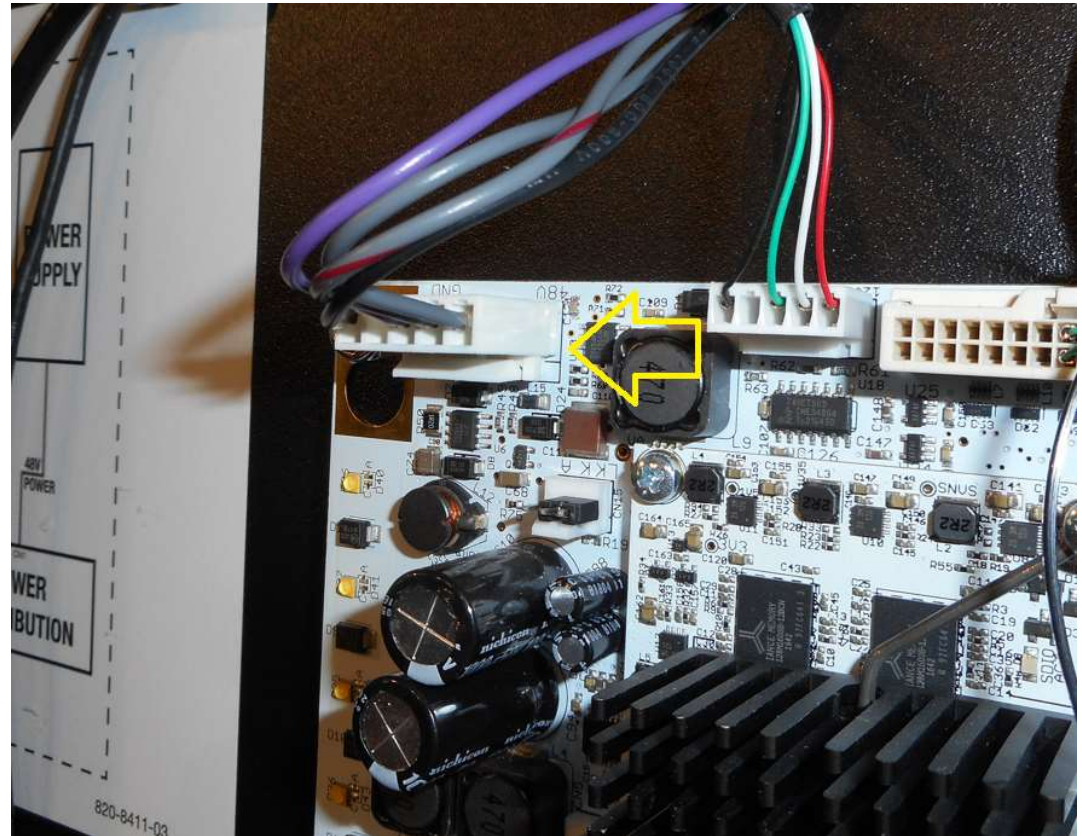
Take note of the factory Wire Loom location. This is a #8-32 Mounting Stud and Nut and will be used to mount your DIY Amplifier in a later step.



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# Spike & Spike-2 Power Board Installation

1. Disconnect the factory wire connector from CN7.

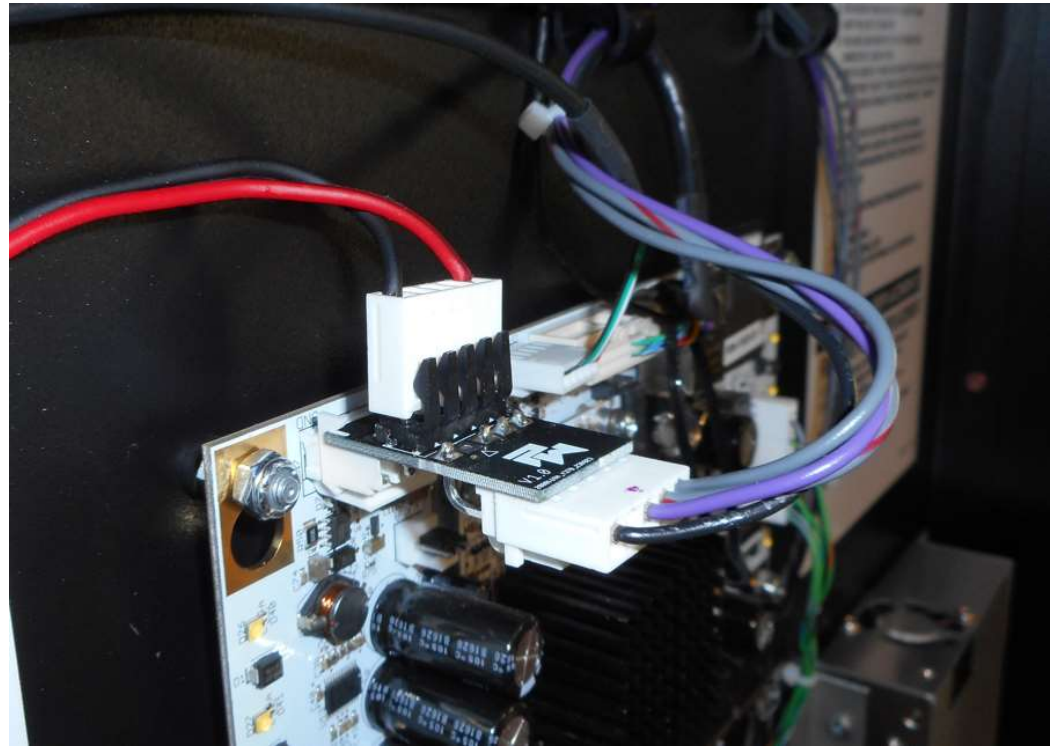


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## Spike & Spike-2 Harness Power Cable

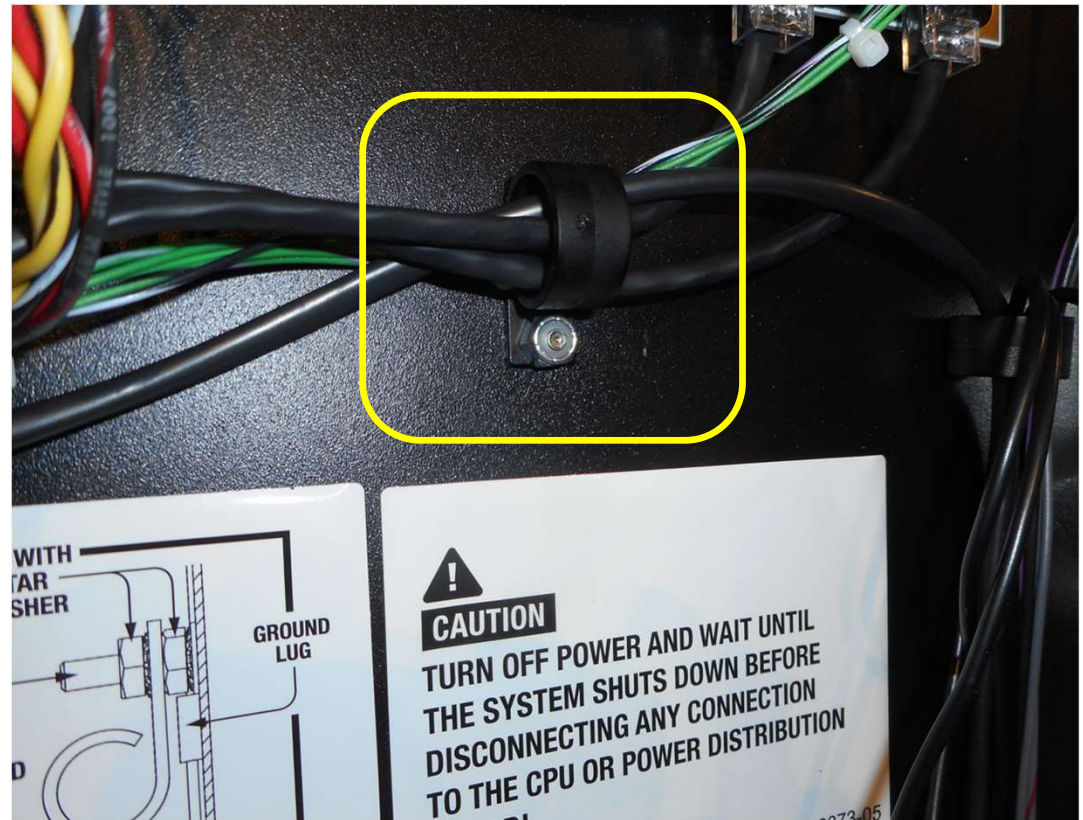
1. Plug the CN7 cable into the supplied power board.
2. Plug the PinWoofers DIY Amp Power Cable into the supplied power board.
3. Plug the power board into Header CN7.



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# Backplane Mounting Location

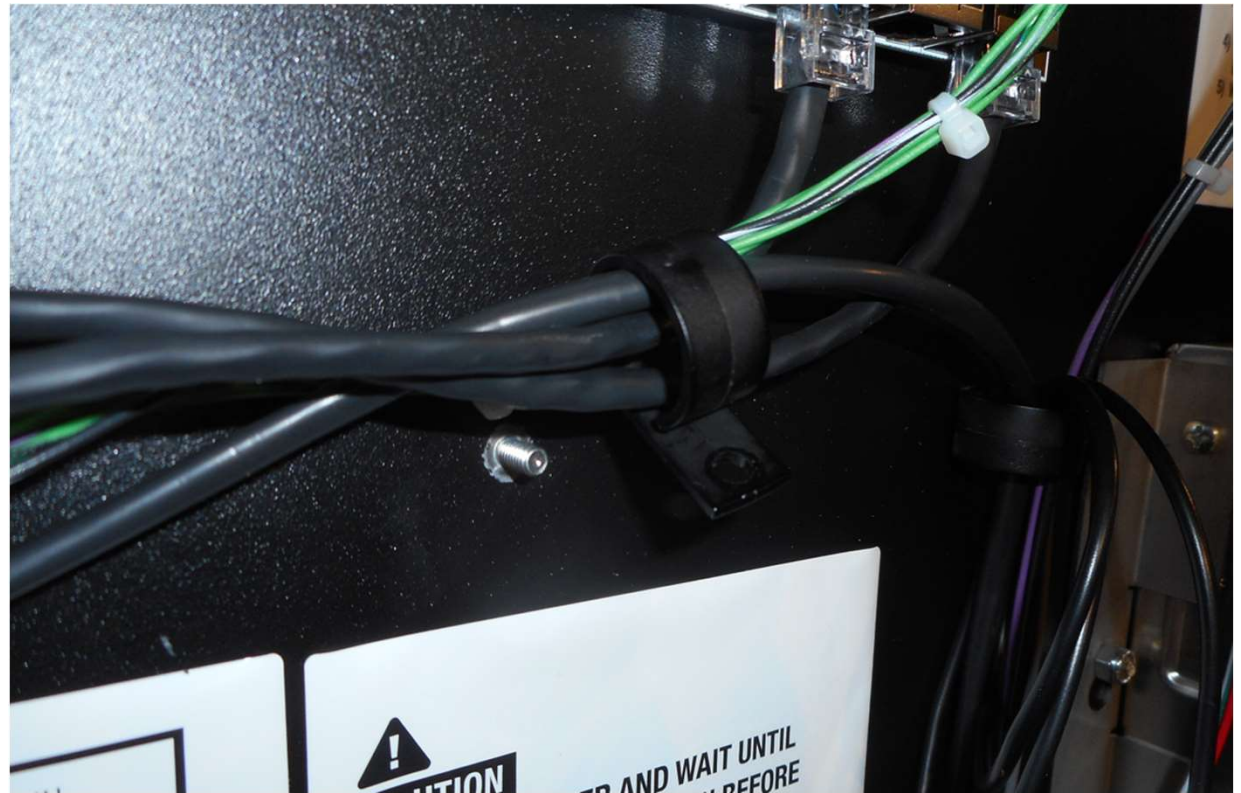
Shown in more detail, in the yellow box, is the backplane #8-32 Mounting Stud, Nut and Wire Loom



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## Free Wire Loom

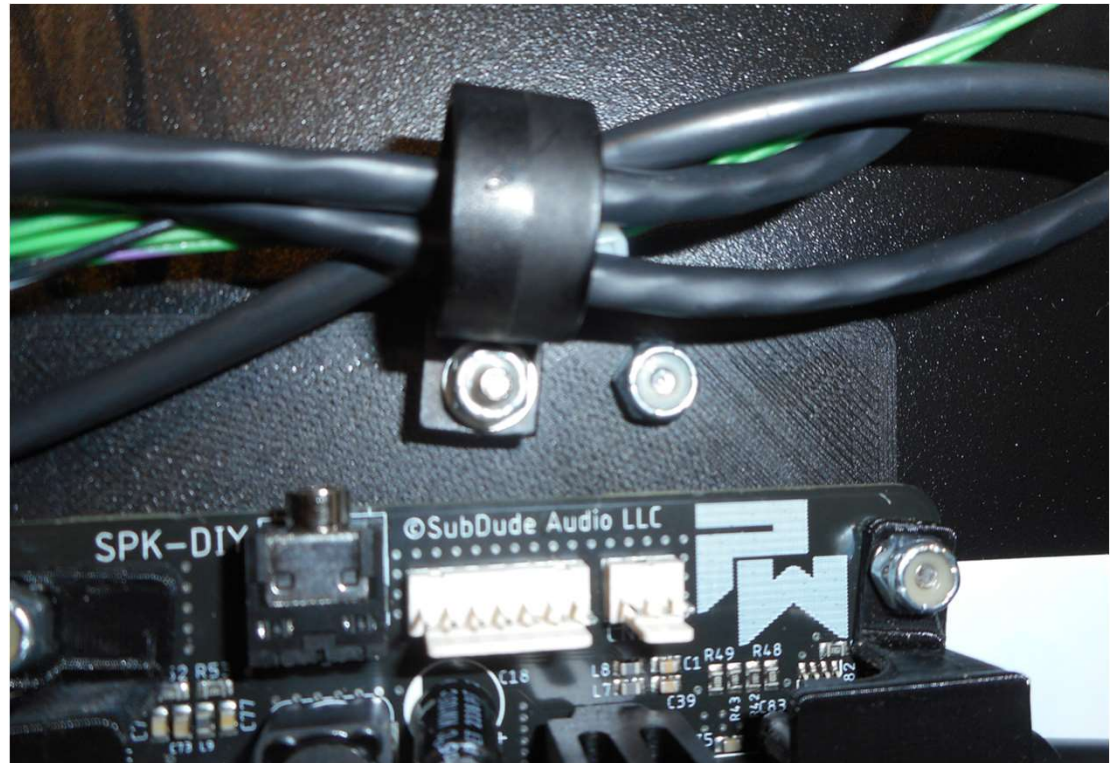
Remove the Nut to free the wire loom.



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# Mount the Amplifier

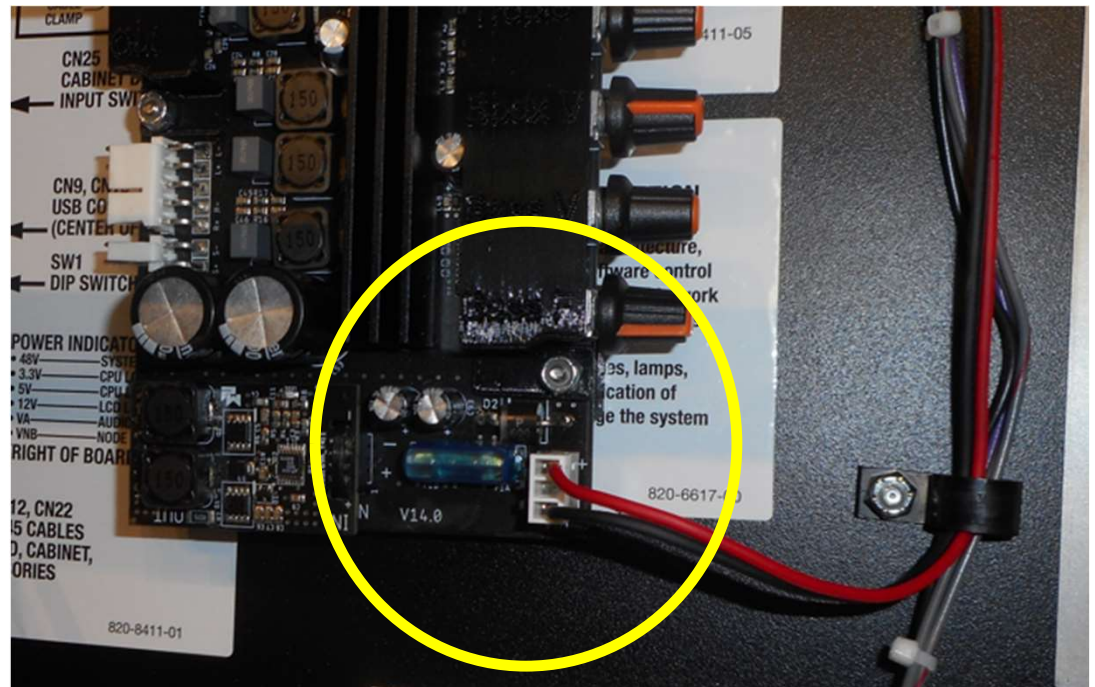
- Attach the wire loom to the screw on the DIY amplifier using the loose nuts and washers already populated on the screw. Do this before mounting the amplifier to the backplane stud.
  - Shown to the right is the mounted amplifier.
  - There is a double sticky tape square on the back-side of the amplifier bracket.
  - Consider the amplifier upgrade permanent and realize that the double sticky tape may be difficult to remove after it touches the backplane.
1. Position the backplane stud into the amplifier bracket hole as shown.
  2. Test fit the location, if necessary, before committing to the tape.
  3. Take care to mount the amplifier exactly as shown.
  4. Remove the tape cover and commit to the mount.
  5. Fix the bracket to the backplane stud using the #8-32 Nut.
  6. Fix the wire loom to the bracket screw as shown.



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## Connect Power Cable to Amplifier

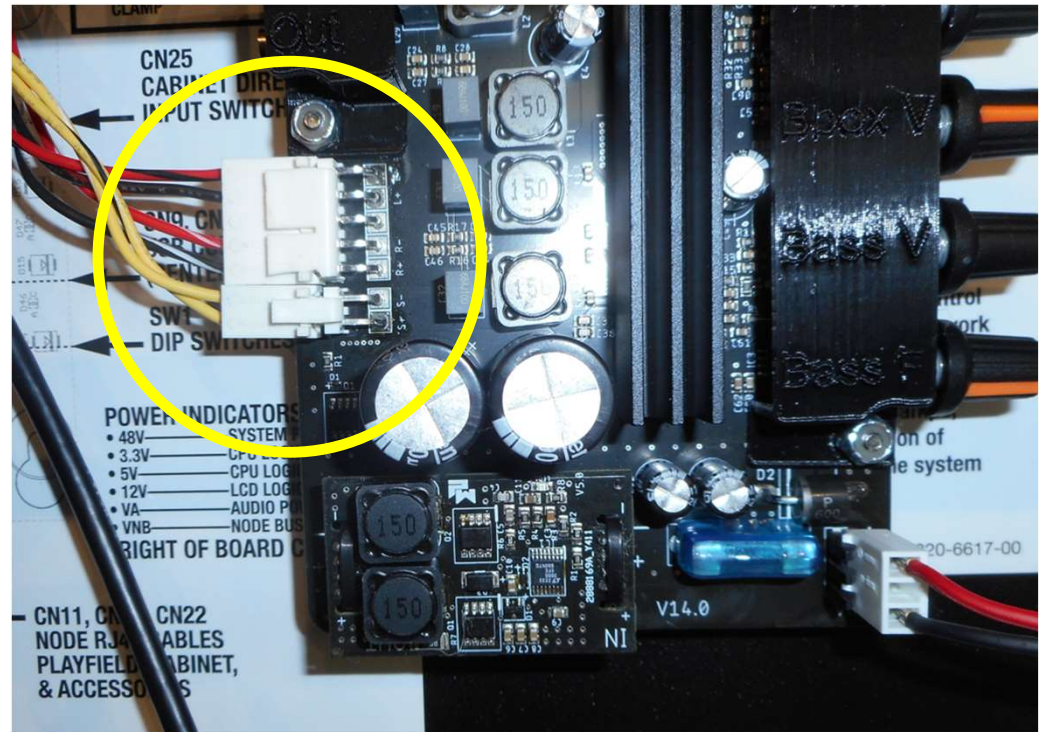
1. Plug the 3-pin (2-wire) power connector to the amplifier as shown.
2. Utilize existing wire looms to secure the power cable.



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# Connect Speaker Connectors

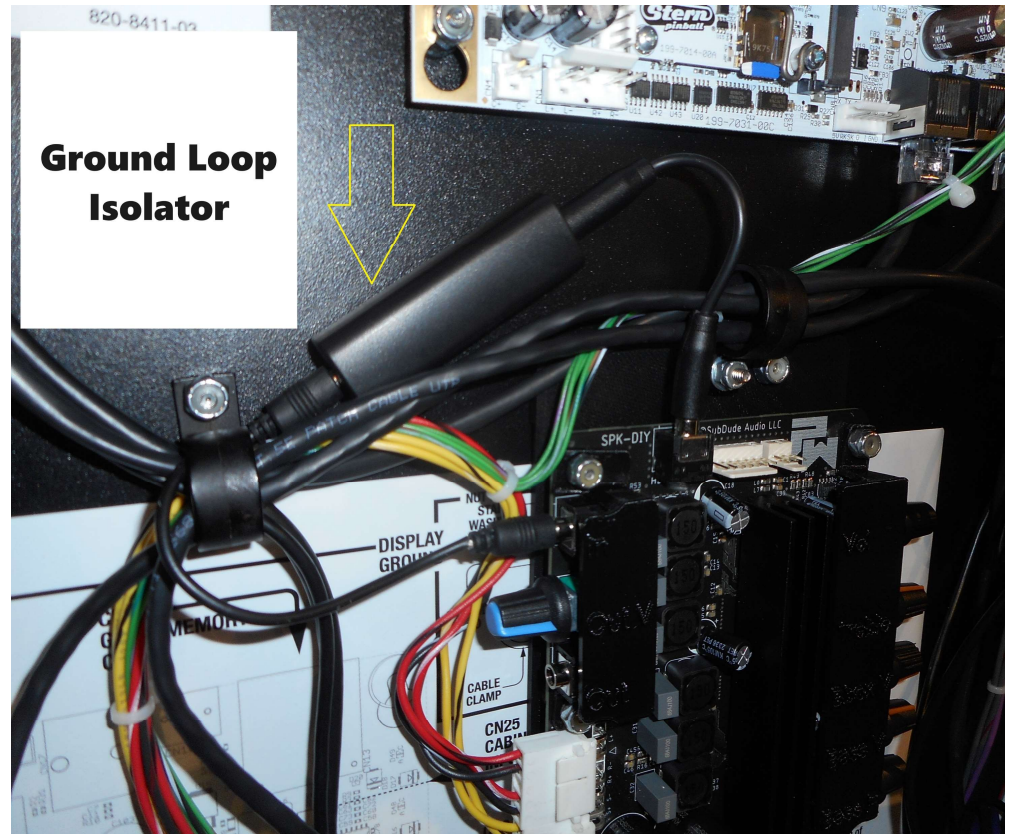
1. Relocate the CN1 and CN4 connectors from the CPU Node board to the DIY Amplifier Speaker Headers, as shown.



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# Connect Ground Loop Isolator

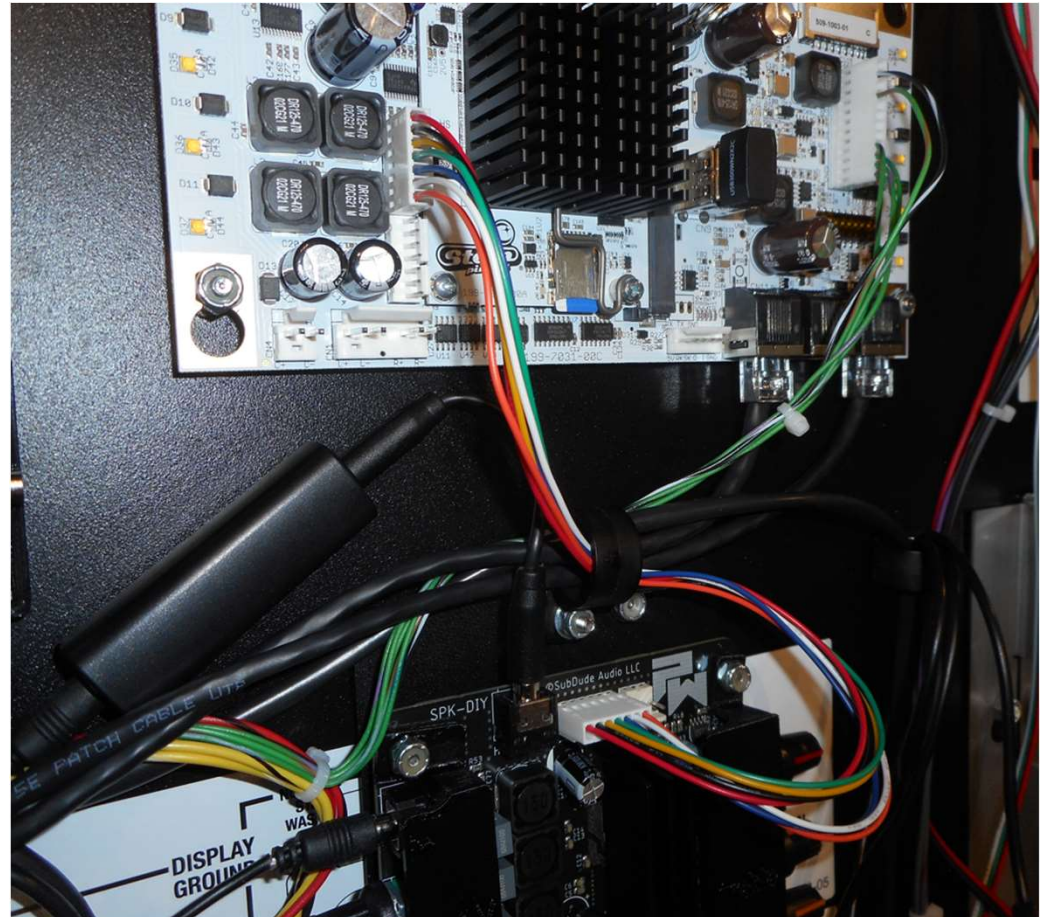
1. Shown in the yellow circle is the ground loop isolator.
2. Connect one cable to the 3.5mm TRS jack adjacent to the input headers.
3. Connect the other cable to the “IN” jack of the DIY amplifier board.
4. **The amplifier will not function unless the ground loop isolator is installed.**
5. The “Out” Jack can be used to supply a full-range line level signal to an external subwoofer or other audio device.



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# Line Out Header Connection

1. **For Spike-2 Titles** - Connect the 7-pin wire harness between the CN5 header on the Spike-2 CPU Node Board and the CN5 Header on the DIY Amplifier as shown.
  1. For Iron Maiden and Earlier titles, there may be a 6-pin header at CN5 on Spike-2. Please review the below document link carefully to determine how to connect the line out connector:  
<https://pinwoofer.com/content/PW-Spike-2-6-pin-Versus-7-pin-CN5-Header.pdf>
2. **For Spike Titles** – Connect the 3-pin wire harness between the CN27 Line Out header on the Spike CPU Node board and the CN27 header on the DIY Amplifier.
3. As needed, you can tuck the excess wire into a nearby wire loom.



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**Your DIY amplifier is now ready for use.**