PinPAC4 Installation Manual

Version 1.3 September 22, 2015

Contents

Warnings and Agreements

Welcome! The PinPAC Pinball Person Audio Controller has been designed for simplicity of installation! As with any Pinball Machine modification and add on kit there is a required level of expertise for the installation. If you are not proficient in basic pinball parts installation we recommend having our kit installed by someone who is proficient with the basics of pinball repair. Pinnovators requires our kit be installed by an experienced Pinball service technician with basic electrical skills. As with any electrical piece of equipment a danger does exist and you must agree to not hold Pinnovators responsible for any injury, damages, etc. before continuing.

Sound Levels: Pinnovators recommends running your headphone sound level at a safe level to prevent long term hearing loss. For a good example of recommend sound levels, we recommend following suggestions given by major audio equipment manufacturers such as Apple and their Ipod.
phys.org/news80304823.html
www.macworld.com/article/1060274/hearingprotection.html

ESD: We recommend always discharging the headphone cable by touching it to an exposed metal part of the pinball machine before plugging it into the machine.

Power Cord: ALWAYS UNPLUG THE POWER CORD for safety when working on your pinball machine!

Playfield Propping: Pinnovators highly advises following Playfield propping instruction for your pinball machine. These instructions are typically found inside the Operators manual for each machine. Failure to follow these instructions can cause fatal injuries or even Death. Pinnovators also recommends having an assistant hold a propped playfield in the up position when servicing under the playfield.

1. What's included in the PinPAC4 Kit

PinPAC4MAC Front Panel	
Back Box Board	
Interface Cable	
Sub Cable kit	

2. Requirements:

A. The Pinnovators PinPAC4 system require a Universal Validator Door slot on the machine's Coin door in the lower left location.
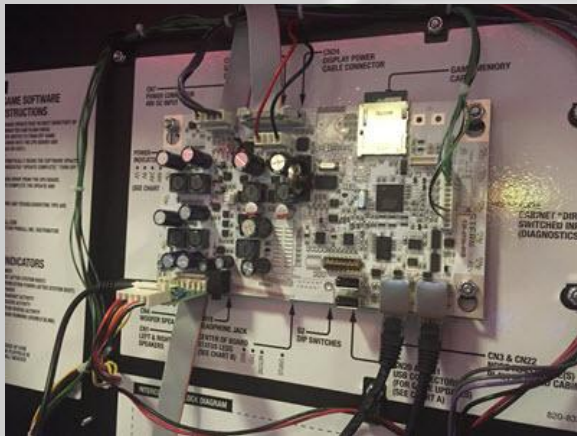
3. Preparation
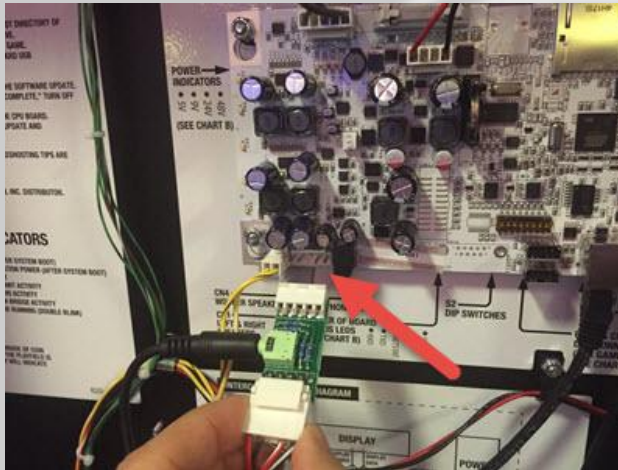
Unplug the Pinball Machine!

Next remove the back glass on the system and open
the light board to expose the System circuit board.
The Stern KISS SPIKE is shown below as an example.
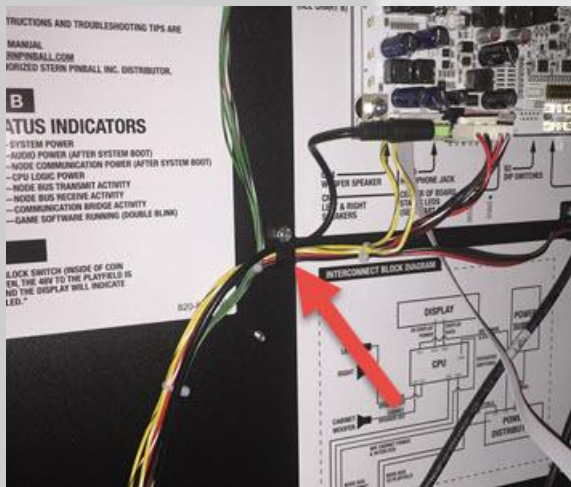(shown with our sub board already installed)

4. Back Box Installation: Subwoofer / Audio out Board

Locate the five-pin speaker connector shown by the red arrow in the picture. Remove the speaker connector by carefully rocking the connectors while pulling it out. Insert the speaker wire into the Sub adapter board as shown
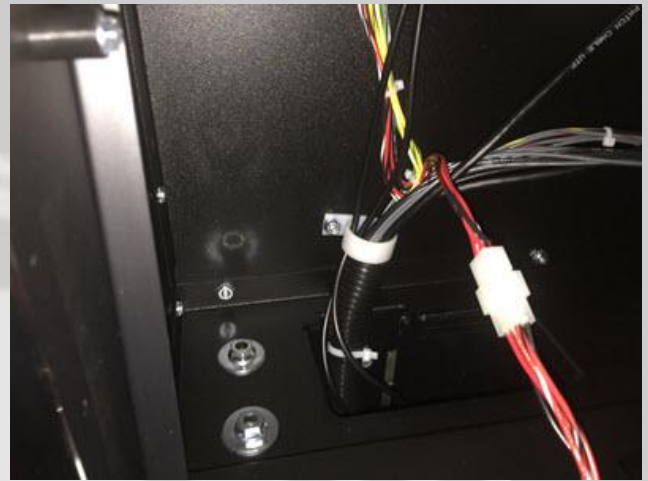

Plug supplied Pinnovators 3.5 mm 12ft cable from the subwoofer cable kit into the 3.5mm green jack on the Back Box Board.

Route the sub cable through the black cable clamp as shown.

Run the sub cable down through the bottom of the back box and into the main cabinet.

Gently push up on one of the vent screens underneath the pinball machine. A staple holds the screen in place but can be easily remove.

Finally, route the 3.5mm sub cable out the vent hole. Use the included Velcro tie to secure the cable to the leg of the pinball machine.
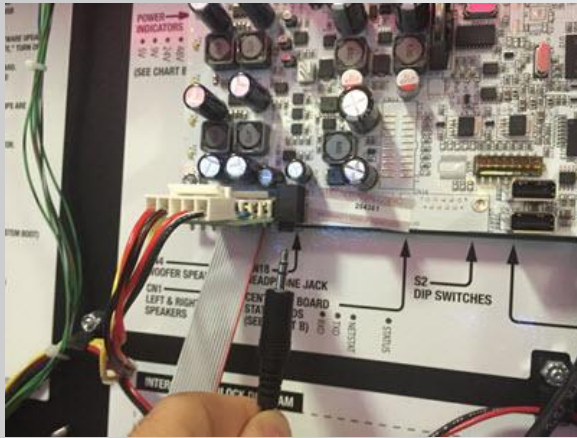

NOTE: Leave some slack in the cable so the back box can be easily folded down without stretching the cable!

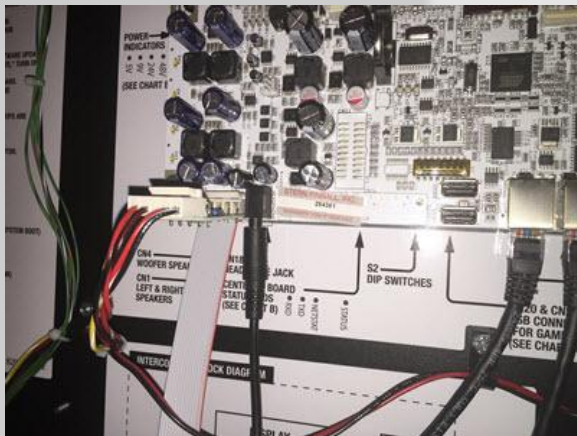## 5. Back Box Installation: Headphone Audio cable
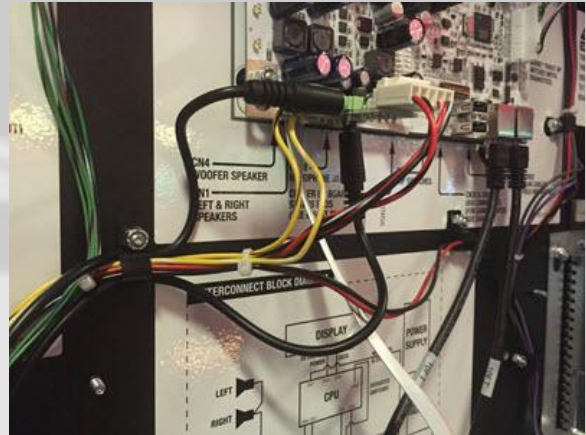
Unwrap the other 12ft 3.5mm audio cable.

Insert one end of the cable into the Headphone output jack on the SPIKE CPU board.
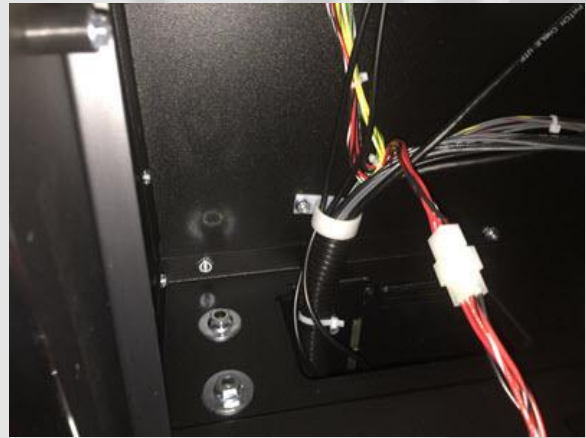

Make sure it is fully inserted into the jack.

Route the cable into the cable harness clip as shown. It may be a tight fit now that you have two cables going through the clip but it will fit.

Feed the remaining cable down the bottom of the Back Box and into the cabinet.
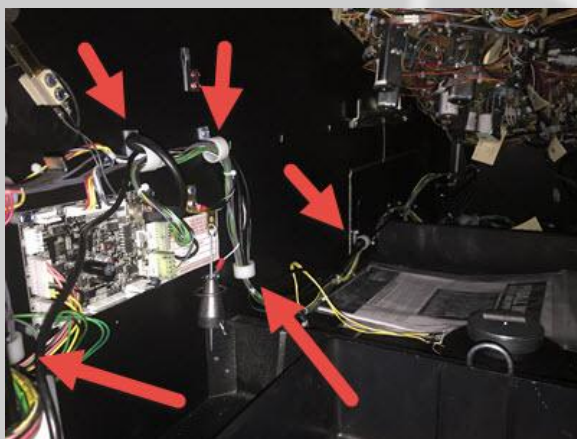

Reassemble the Back Box.

6. Running the Headphone Audio cable

Using a helper, remove the playfield glass and lift up the playfield. Depending on the game, tuck the new cable into the wire harness clips as shown. Leave an extra foot of cable up at the Back Box area if you plan on folding the back box down.

NOTE: Leave some slack in the cable so the back box can be easily folded down without stretching the cable!
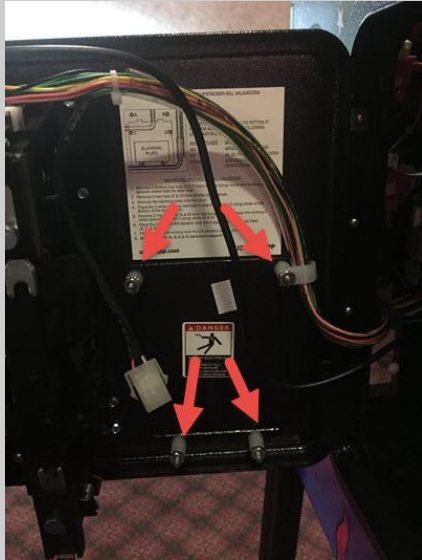

Continue to route the headphone audio cable along the wire harness. Secure the cable in the white cable clamps. The cable will end up at the coin door.
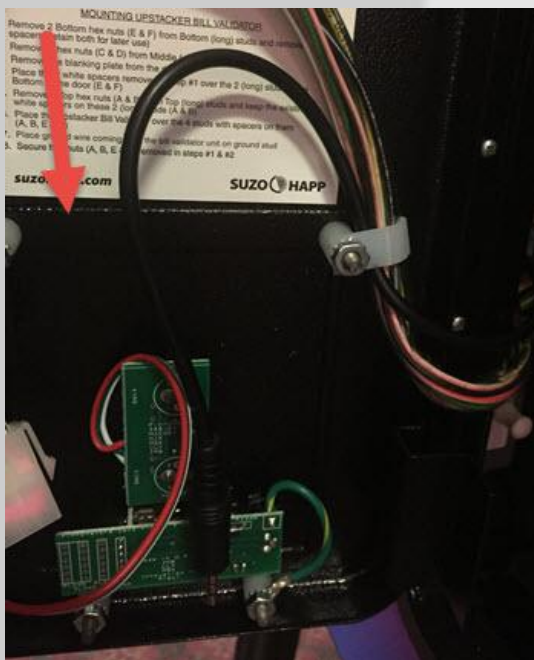
7. Coin Door Installation PinPAC4:

Remove validator blank plate by unbolting the four nuts as shown. Note: Save the spacers. The spacers are used to properly space the length of the screw.

Insert the end of the 3.5mm headphone audio cable into the 3.5mm connector on the PinPAC4 front control panel as shown. The connector is on the front of the control panel PCB. We did this to keep the 3.5mm cable as close as possible to the plate to keep it sleek looking!

Route the cable into the cable harness clip behind the door as shown. Test the door to make sure it closes properly. Adjust as necessary.
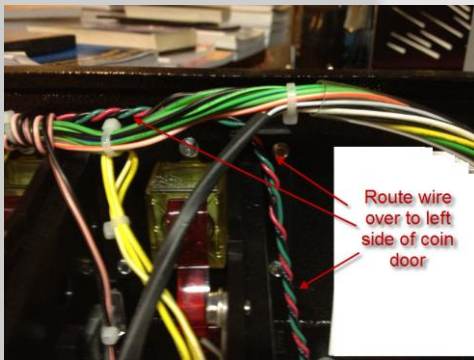
Insert the PinPAC4 plate as shown below. Position the ESD ground wire (the green wire) on the threaded stud. Fasten with the original hardware.

1. MAC Cable Installation
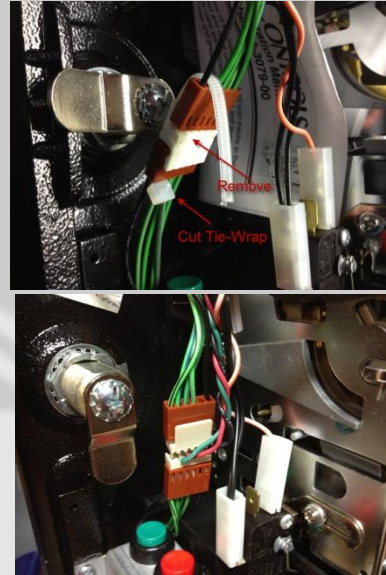
Coin Door cable Installation

The Front panel should already be installed according to the installation manual included in this kit. These section of the instructions uses a SAM system but the SPIKE is basically the same.

Route the PP4MAC remote cable over the top of the coin slots as shown. Route it down to the system control panel buttons. *NOTE: The three color cable is now a flat three color ribbon cable.*
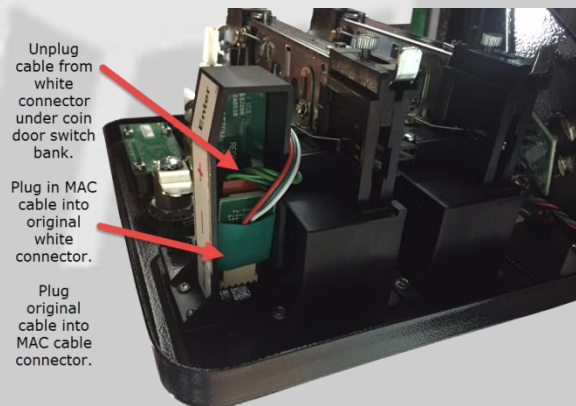

SPIKE Machines with inline connector:
Cut the tie-wrap as shown then disconnect the male to male jumper. Insert the PP4 MAC cable connector into the two female connectors as shown below. Your kit will use our newer PCB version. The PCB version has two connectors mounted to it.

If your coin door does not have the inline connector shown above then please contact us for a Posi-tap adapter. Exported SPIKE systems usually do not have the connector and will need the adapter BUT there were not many exported SPIKE systems at the time of this writing to verify.

Newer coin doors.

The latest version of the MAC kit has a small Printed Circuit board with connectors mounted to it. The PCB is inserted in line with the cable going to the coin door pushbuttons as shown below.
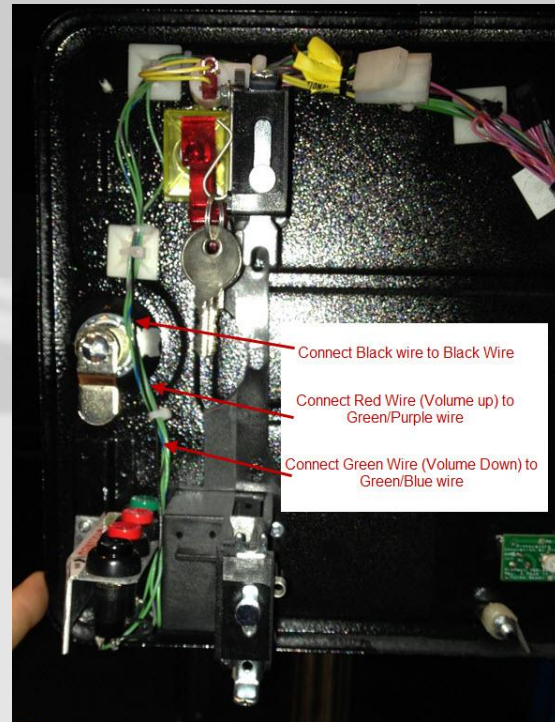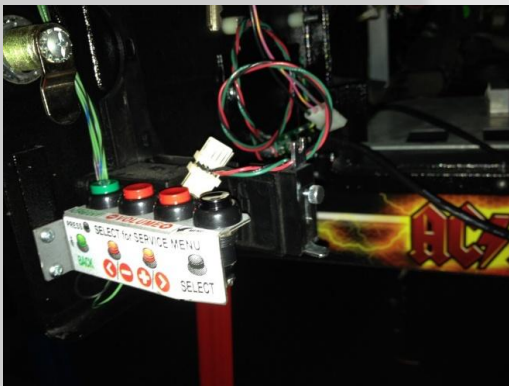
16. Posi-Taps!

For Export SPIKE machines.

This optional adapter uses three Posi-Tap connectors. The Posi-tap connectors will be used to cleanly splice into the button signals for the up and down volume control.

This is a picture of the optional adapter along with a few YouTube video links showing how to install the Posi-Taps. Please watch the video first.
(Note, Pinnovators did not make the videos)

Connect Black wire to Black Wire

Connect Red Wire (Volume up) to Green/Purple wire

Connect Green Wire (Volume Down) to Green/Blue wire

http://www.youtube.com/watch?v=NQWYWuNbpog
http://www.youtube.com/watch?v=Yiimgl-Rdmw

Connect the the Posi-tap adapter cable for export SPIKE systems as follows:

Poisi-Tap Adapter Cable wire	Wire Function	Push Button Panel cable wire:
Black	Ground	Black
Red	Volume Up	Green/Purple
Green	Volume Down	Green/Blue

8. Final Checkout

- Power up the system and start a game!
- Verify sound can be heard from the Back Box speakers and the lower Cabinet speaker.

- Insert headphones into the jack and verify levels in headphones can be adjusted with the volume control knob.

- Verify system volume can be adjusted with the up and down buttons.

9. Operation and Set audio levels

Use the up and down buttons to easily set the game audio level. Game level is now completely independent of the headphone level!

Lower the system volume using the down button to "Mute" the game.

System volume does not mute when headphones are plugged in. You can focus on your game while wearing headphones and let your fans watch and listen to you play!

You may need to adjust the levels of the headphones in the setup menu. These are the steps to accomplish that.

Enter Service menu

Set at MAX volume (if desired)

Exit the service menu

10.   Recommended Headphones.

Pinnovators tested the PinPAC1, 2,3 and on many different headphones. Our favorite was the beats by dr. dre. We also tested a moderately priced set of headphones ~$30 and was still blown away by how good the bass response was and how clear the treble was!

Thank your purchase of our product! We hope you get many years of service from it.

The Pinnovators Team.