

# Orchard Audio PecanPi DAC and Kit Streamer Instructions

## Contents

- [1 Orchard Audio PecanPi DAC and Kit Streamer](#)
- [2 Product Information](#)
- [3 Product Usage Instructions](#)
- [4 Ribbon Cable Connection](#)
- [5 Volume Control](#)
- [6 PecanPi DAC SW Configuration](#)
- [7 Wi-Fi with PecanPi® DAC](#)
- [8 Operation](#)
- [9 Documents / Resources](#)
  - [9.1 References](#)
- [10 Related Posts](#)



## Orchard Audio PecanPi DAC and Kit Streamer



## Product Information

### PecanPi Streamer

The PecanPi Streamer is a DAC (Digital to Analog Converter) that can be used with Raspberry Pi or Tinker Board. It requires a minimum power supply of 9V 2A with a 2.1mm I.D. x 5.5mm O.D. barrel plug that is center positive. The PecanPi DAC also has a built-in 9V to 5V converter. The device has a potentiometer (pot) for volume control and RCA and S/PDIF coax connections for audio output. It uses the RPI-DAC overlay/driver and can be used standalone by installing the J1 jumper.

## Product Usage Instructions

1. Watch the video instruction for assembling the streamer at [https://youtu.be/cV3Tu6f\\_TW0](https://youtu.be/cV3Tu6f_TW0)
2. When installing the ribbon cable, make sure to place it properly oriented. Refer to the above video at the 8:30 mark.
3. By default, the PecanPi DAC will power the Raspberry Pi or Tinker Board. If you want to power the Raspberry Pi or Tinker Board with its own power supply, remove jumper J2. Do not power both DAC and Raspberry Pi / Tinker Board with J2 jumper installed, this will cause damage.
4. When the potentiometer (pot) is turned fully clockwise, the volume control is disabled. When the pot is turned fully counter-clockwise, the DAC is muted. When operating from the S/PDIF interface, the volume can only be controlled using the pot.
5. The S/PDIF coax connection gets wired to connector X8. The wire connection closest to the edge of the board is the signal (tip) and the other two can be interchangeably used for ground and shield (ring). The S/PDIF input has an automatic switch over that routes audio from the S/PDIF connection when there is a valid signal. When no valid signal is available on the S/PDIF interface, the device defaults to accepting data from Rpi or Tinker

Board.

6. The PecanPi DAC uses the RPI-DAC overlay/driver. For Volumio, select RPI-DAC during initial configuration, set the volume control (mixer) to software, and disable Wi-Fi. For Ropieee, select Orchard Audio PecanPi DAC in configuration and disable USB audio. For TinkerOS, add the following line to the hw\_intf.conf file:  
intf:dtoverlay=rpi-dac
7. For TinkerOS, make sure you are using the ALSA with RPI-DAC as the output device. Disable the Raspberry Pi's or Tinker Boards' internal Wi-Fi and Bluetooth. If you need Wi-Fi operation, use one of the recommended Wi-Fi to ethernet bridges: TP-Link AC750 Wi-Fi Bridge and Extender – For 5G TP-Link 300Mbps Wi-Fi Bridge and Extender – For 2.4G. The Wi-Fi and Bluetooth can be disabled in your software interface or by adding the following two (2) lines to the config.txt file for a Pi 3B or Pi 3B+:
  - dtoverlay=pi3-disable-wifi
  - dtoverlay=pi3-disable-bt
8. The PecanPi DAC can be used completely standalone not needing a Rpi or Tinker Board. In this case, the J1 jumper must be installed for the device to function. Having the J1 jumper installed and connecting the DAC to Rpi or Tinker Board will cause damage.

**Watch this video instruction of how to assemble the streamer here: [https://youtu.be/cV3Tu6f\\_TW0](https://youtu.be/cV3Tu6f_TW0)**

## **Ribbon Cable Connection**

When installing the ribbon cable, make sure to place it properly oriented. See the above video at the 8:30 mark.

### **NOTE**

- Installing the ribbon cable incorrectly will cause damage.
- Assembly for Rev 3.0 streamer is identical for RCA and SPDIF connections see below.

## **Powering PecanPi and Raspberry Pi or Tinker Board**

- The PecanPi DAC requires a 9V 2A minimum power supply with a 2.1mm I.D. x 5.5mm O.D. barrel plug that is center positive.
- By default, the PecanPi DAC will power the Raspberry Pi or Tinker Board. It has a built-in 9V to 5V converter.
- If you want to power the Raspberry Pi or Tinker Board with its own power supply, remove jumper J2.

**NOTE:** Do not power both DAC and Raspberry Pi / Tinker Board with J2 jumper installed, this will cause damage.

## **Volume Control**

When the potentiometer (pot) is turned fully clockwise the volume control is disabled

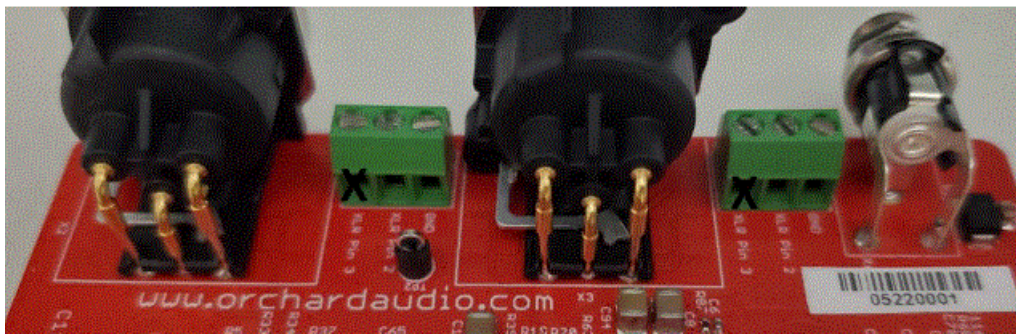
When the pot is turned fully counter-clockwise the DAC is muted

When operating from the S/PDIF interface the volume can only be controlled using the pot.

## **RCA Connection**

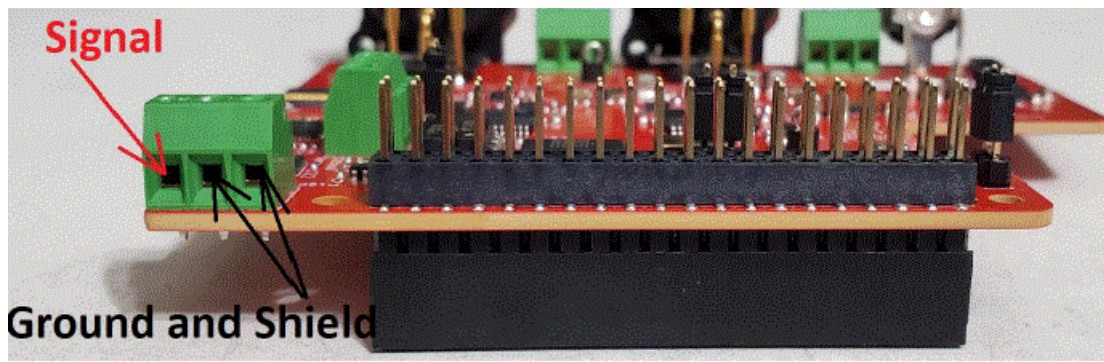
The RCA connectors get wired to the green terminal blocks (X4 and X5) between the XLR connectors. Connections are as follows:





- Red wire (Tip) → XLR Pin 2
- Black and Shield (Ring) → GND
- Do not use pin marked XLR Pin 3
- Both RCA and XLR outputs are active at the same time.

### S/PDIF Connection



- The S/PDIF coax connection gets wired to connector X8.
- The wire connection closest to the edge of the board is the signal (tip) and the other two can be interchangeably used for ground and shield (ring).

The S/PDIF input has an automatic switch over that routes audio from the S/PDIF connection when there is a valid signal. When no valid signal is available on the S/PDIF interface the device defaults to accepting data from Rpi or Tinker Board.

### PecanPi DAC SW Configuration

The PecanPi DAC uses the RPI-DAC overlay/driver. This is what you have to select in your RPi software package or enable in the config.txt file with the following command:

```
dtoverlay=rpi-dac
```

### For Volumio

- Select RPI-DAC during initial configuration
- Set the volume control (mixer) to software

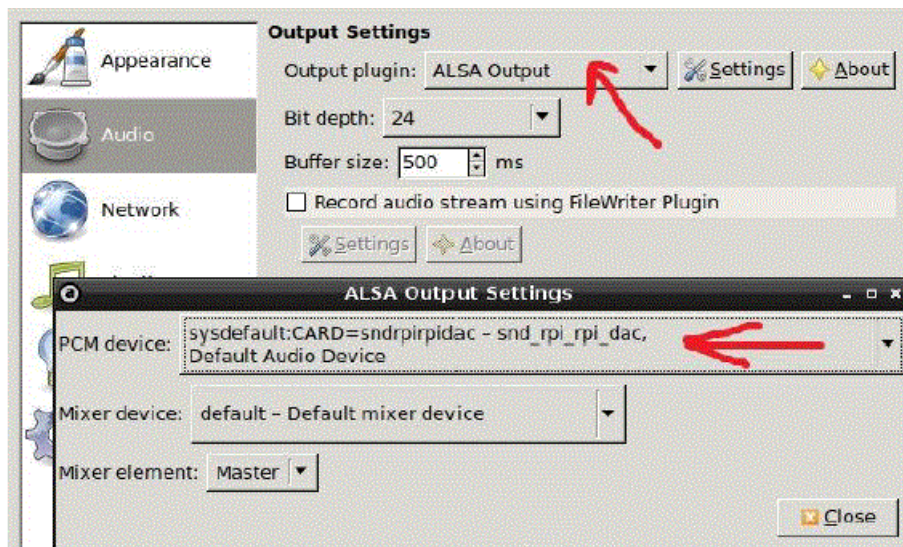
### Disable Wifi

- **For Ropieee:** Select Orchard Audio PecanPi DAC in configuration and disable USB audio.

## For TinkerOS

- You need to add the following line to the hw\_intf.conf file: `intf:dtoverlay=rpi-dac`

For TinkerOS make sure you are using the ALSA with RPI-DAC as the output device like this:



## Wi-Fi with PecanPi® DAC

Disable the Raspberry Pi's or Tinker Boards' internal Wi-Fi and Bluetooth. If you need Wi-Fi operation, use one of the recommended Wi-Fi to ethernet bridges:

- TP-Link AC750 Wi-Fi Bridge and Extender – For 5G
- TP-Link 300Mbps Wi-Fi Bridge and Extender – For 2.4G
- The Wi-Fi and Bluetooth can be disabled in your software interface or by adding the following two (2) lines to the config.txt file for a Pi 3B or Pi 3B+:
  - `dtoverlay=pi3-disable-wifi`
  - `dtoverlay=pi3-disable-bt`
- For TinkerOS disable Wi-Fi in the settings menu.

## Operation

### PecanPi DAC Standalone S/PDIF Operation

The PecanPi DAC can be used completely standalone not needing a Rpi or Tinker Board. In this case, the J1 jumper must be installed for the device to function.

**NOTE:** Having the J1 jumper installed and connecting the DAC to Rpi or Tinker Board will cause damage.

## Documents / Resources

