

Aodie KAZOO: Audio Line-out for Raspberry Pi Zero

Plug Aodie KAZOO: Audio Line-out for Raspberry Pi into your hi-fi amp or powered speakers, then sit back, relax, and soak in the rich, digital audio. It has a high-quality I2S DAC, high-res colour display, and playback control buttons.

This board is perfect for upgrading an existing hi-fi amp and speakers, or a set of powered monitors, with digital audio from local audio files (MP3, FLAC, etc.) or from streaming services like Spotify. The DAC on Pirate Audio Line-out gives you crisp 24-bit / 192KHz digital audio through its 3.5mm stereo jack.

Pirate Audio is a range of all-in-one audio boards for Raspberry Pi, with high-quality digital audio, beautifully-crisp IPS displays for album art, tactile buttons for playback control, and our custom Pirate Audio software and installer to make setting it all up a breeze.

Features

- Line-level digital audio (24-bit / 192KHz) over I2S
- PCM5102A DAC chip ([datasheet](#))
- 3.5mm stereo jack
- 1.3" IPS colour LCD (240x240px) (ST7789 driver)
- Four tactile buttons
- IR Remote (both IR Receive and Send)
- Mini HAT-format board
- **Fully-assembled**
- Compatible with all 40-pin header Raspberry Pi models
- **Aoide KAZOO software**
- **Compatible Pirate Audio software**
- Dimensions: 65x30.5x9.5mm

Software

Our software installs the Python library for the LCD, configures the I2S audio and SPI, and then installs Mopidy and our custom Pirate Audio plugins to display album art and track info, and to use the buttons for playback control.

Here's how to get started:

1. Set an SD card up with the latest version of Raspbian.
2. Connect to Wi-Fi or a wired network.
3. Open a terminal and type the following:

```
sudo apt update && sudo apt install git
git clone https://github.com/u-geek/AOIDE\_KAZOO --depth 1
cd AOIDE_KAZOO
sudo ./setup.sh
```

4. Reboot your Pi

Notes

Note that our installer, linked above, does all of the below for you, but if you're an intrepid hacker then you might need to know this stuff!

- The DAC can be configured by adding `dtoverlay=hifiberry-dacplus` to the `/boot/config.txt` file.
- The buttons are active low, and connected to pins BCM 5, 6, 16, and 20
- The display uses SPI, and you'll need to enable SPI through the Raspberry Pi configuration menu.
- Software compatible Pirate Audio software
(<https://learn.pimoroni.com/tutorial/sandyj/getting-started-with-pirate-audio>)
`git clone https://github.com/pimoroni/pirate-audio`
`cd pirate-audio/mopidy`
`sudo ./install.sh`

Hardware

- st7789 display - <https://github.com/u-geek/st7789-python>

- four buttons, active low connected to BCM 5, 6, 16, and 20 (A, B, X, Y respectively)
- IR remote, IR receive GPIO use BCM4 and IR send GPIO use BCM17

Installation DAC

You'll need to add the following lines to `/boot/config.txt` to get audio up and running:

```
dtoverlay=hifiberry-dacplus
```

You can also disable onboard audio if you're not going to use it, this sometimes helps applications find the right audio device without extra prompting:

```
dtparam=audio=off
```

Installation Display

If you're planning to build your own application you'll find some inspiration in examples.

But first you'll need some dependencies:

```
sudo apt-get update  
sudo apt-get install python-rpi.gpio python-spidev python-pip python-pil python-numpy
```

And then you'll need the `st7789` library:

```
sudo pip install st7789
```

For more display examples see: <https://github.com/u-geek/st7789->

[python/tree/master/examples](https://github.com/u-geek/st7789-python/tree/master/examples)