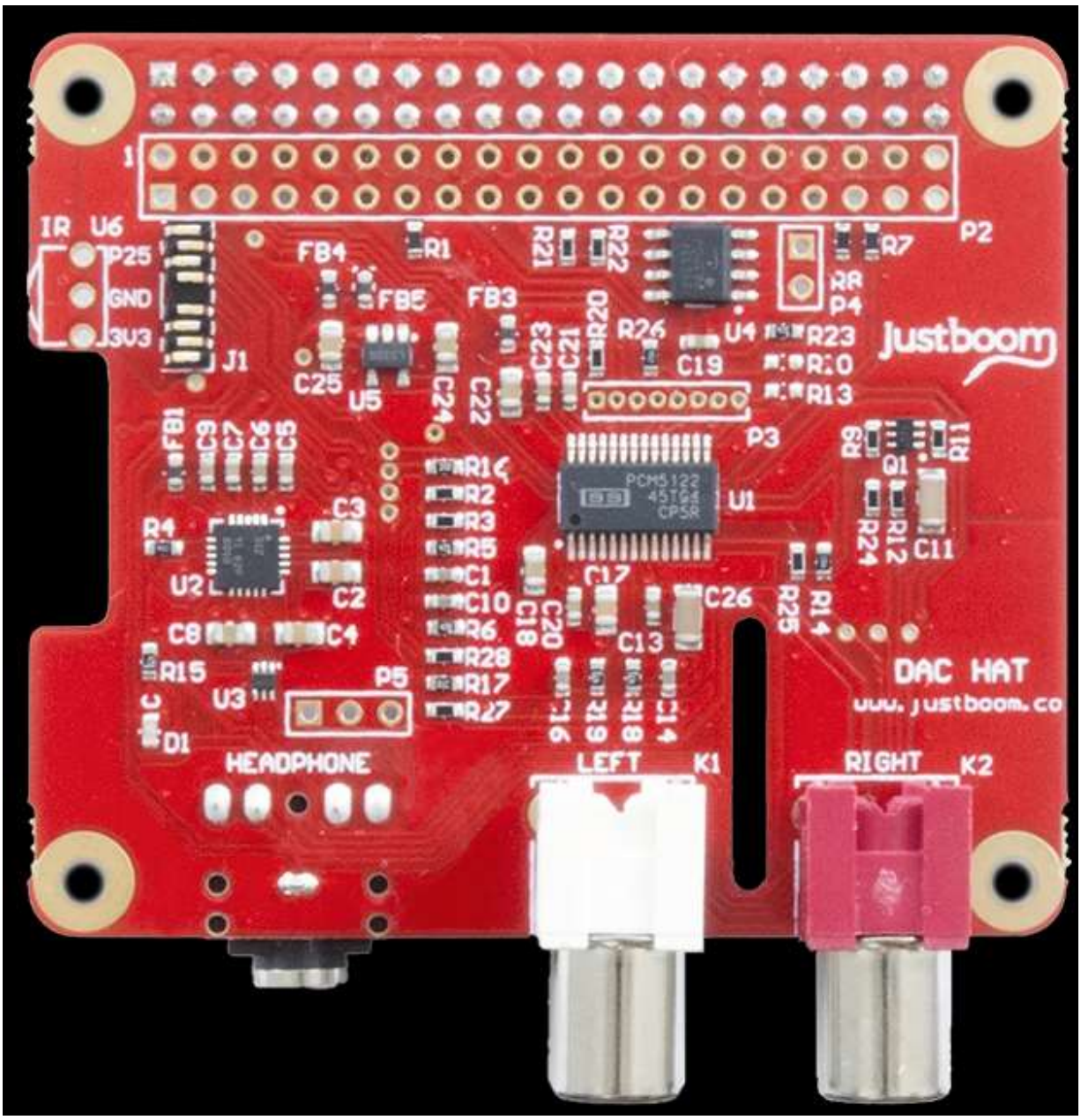
Pi Supply
The Maker Emporium



JustBoom / DAC JBM-001

JustBoom DAC HAT for the Raspberry Pi

The JustBoom DAC HAT is a plug and play, high resolution, digital-to-analog converter for the Raspberry Pi. Simply stack the plug-and-play add on board (HAT) onto your Raspberry Pi A+, B+, 2B or the new 3B and it will be ready to use immediately.

We've designed the JustBoom DAC HAT to be simple to install and use. With no soldering required and all the mounting hardware already provided this product is suitable for absolute beginners and seasoned professionals alike. Just connect your DAC HAT to a set of powered speakers or an audio amplifier and you can be up and running quickly, enjoying flawless high-quality audio playback within minutes of unboxing this Raspberry Pi HAT.

We also include an optional IR receiver to allow remote control operation of your Raspberry Pi. Includes a 384kHz/32-bit DAC chip with hardware volume mixing as well as a 138mW headphone amplifier. Outputs are line level over RCA and headphone amplified over 3.5mm jack cable. The HAT uses the I2S interface for its audio input which reduces CPU load on the Raspberry Pi compared to USB solutions.

It is also powered directly from the GPIO header so no extra cables or power supplies are required to connect to the Raspberry Pi. All of the Raspberry Pi GPIO pins are still accessible on the DAC HAT for easy customisation of your project - add additional sensors, buttons, LEDs, rotary encoders or anything your heart desires. Need help understanding how this Raspberry Pi DAC HAT works? Follow our product guide.

Use cases

Pairing the Raspberry Pi with a high quality audio card provides the perfect solution for a number of exciting projects and applications where the standard on-board audio on the Raspberry Pi simply won't cut it. Here are some possible use cases for the JustBoom DAC HAT and your Raspberry Pi computer:

- Streaming (either from cloud or network storage) high-definition audio player
- Multi-room audio player
- Media centre / set-top box living room entertainment system
- Shop floor / elevator / background music audio player
- High quality audio player with local storage
- Desktop high definition audio player with amplified headphone output
- And many many more

Features

- Full high quality audio 384kHz / 32-bit
- Includes both a DAC (digital to analog converter) and headphone amplifier
- Line-level RCA and headphone amplified 3.5mm jack outputs
- Plug and play compatibility for ease of use
- Hardware and software volume control from your Raspberry Pi
- No soldering required
- Powered by the Raspberry Pi GPIO header
- Compatible with Raspberry Pi A+, B+, 2B, 3B, 3B+, 4B, Raspberry Pi Zero and Raspberry Pi Zero Wireless.
- Mounting hardware included
- Optional IR receiver included in package
- Compatible with the JustBoom Amp which can easily stack on top of the DAC HAT to add amplification and extra outputs!
- All Raspberry Pi GPIO pins still accessible via 40pin unpopulated extension header
- Our Raspberry Pi DAC is fully HAT compliant
- Full driver support in Raspbian / NOOBS
- Compatible with the JustBoom Player / OSMC / RuneAudio / Volumio / Moode / PiCorePlayer / PiMusicBox / OpenELEC and others
- JustBoom Player pre-configured software available on SD cards from various vendors

Technical Information

- Burr-Brown / Texas Instruments PCM5122 DAC chip - 384kHz / 32-bit. Please note that due to Linux driver restrictions, max frequency is currently limited to 192kHz by standard on the Raspberry Pi, however, this can be increased with some manual driver updates
- Texas Instruments TPA6133A2 headphone amplifier 138mW
- Fully integrated hardware volume mixing via alsamixer or any ALSA compatible application
- Integrated EEPROM for automatic Raspberry Pi devicetree driver configuration and fully HAT compatible
- Optional Vishay TSOP4838 IR receiver included in package (solder yourself if required). Also possible to use Vishay TSOP4938 or TSOP4138 or TSOP34338SS1F
- 112dB signal to noise ratio (SNR) and -93dB total harmonic distortion (THD +N at -1dB) for best-in-class audio
- Advanced ESD protection on both headphone and RCA outputs
- Ultra low noise voltage regulator for the best audio output (LDO 10uVrms)