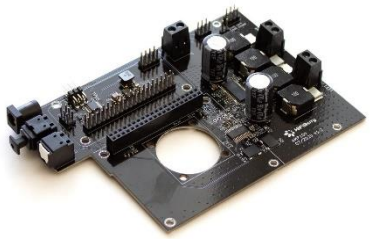
HiFiBerry DAC2 HD

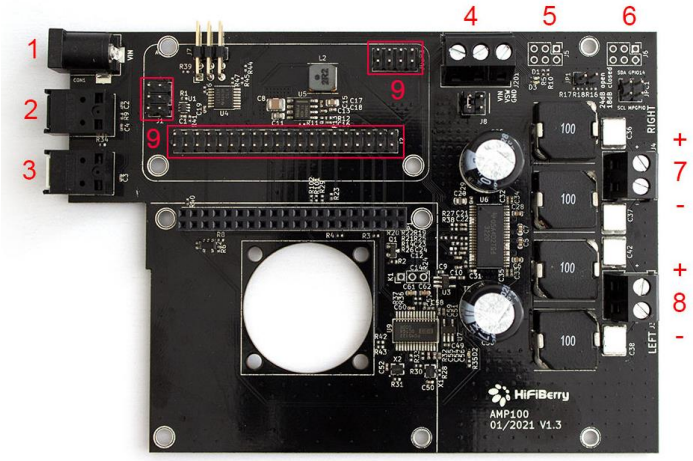
The HiFiBerry AMP100 is our next-generation DAC/Amplifier combination designed for more demanding speakers requiring higher power (up to 2x100W), and will work with all Raspberry Pi models featuring a 40-pin GPIO header.

Features:

- Stereo DAC with sample rates up to 192kHz/24bit, based on the HiFiBerry DAC2 Pro design
- Up to 2x100W output power output
- Can be extended with the HiFiBerry DSP add-on board
- Onboard TOSLink input/output (requires DSP add-on board)
- Uses a single external power supply 12-30V to power the amplifier and the Raspberry Pi
- No soldering, comes as a pre-fabricated kit, just plug in the Pi.
- Comes with all components required to mount it.



Hardware and speaker connectors:



1 Power input, barell jack
2 TOSLink input connector (requires DSP add-on, see below for limitations)
3 Toslink output connector (requires DSP add-on, see below for limitations)
4 Power connector, screw terminal
5 DSP I2S output connector
6 DSP I2S output connector
7 Right speaker output
8 Left speaker output
9 DSP add-on connectors

Due to variations in componentry, the actual board might look a bit different. Layout and components might change without further notice. We do not guarantee a specific PCB layout or specific components.

NOTE: L/R outputs can't be bridged!

Indicator LEDs

D1 fault	Indicates a fault in the output stage, e.g. shortage or overload
D3 clipping	Indicates clipping, meaning, the input signal is higher than the output stage can handle. Slightly glowing is fine.

Specifications

Recommended operating voltage	12-30V	
Absolute maximum operating voltage	32V	
Maximum output power	2x100W	into 4Ohm
THD+N	<0.05%	typical, output power 0.1-10W, 0-20kHz
Typical output power per channel	40W	Vsupply=20V, Rspk = 4Ohm, THD+N <1%
	60W	Vsupply=24V, Rspk = 4Ohm, THD+N <1%
	100W	Vsupply=30V, Rspk = 4Ohm, THD+N <1%
Maximum output power per channel	50W	Vsupply=18V, Rspk = 4Ohm, THD+N <10%
	75W	Vsupply=24V, Rspk = 4Ohm, THD+N <10%
	110W	Vsupply=30V, Rspk = 4Ohm, THD+N <10%
Sample rates	44.1-192kHz	

The AMP100 will power the Raspberry Pi. It is powerful enough for any Pi up to the Pi4B. Note that additional hardware drawing lots of power (e.g. hard disks, displays) might require an external power supply.

Configuration:
`dtoverlay=hifiberry-amp100`

Limitations of the TOSLink inputs and outputs

With only the Amp100 connected to the Raspberry Pi, both TOSLink input and output have no function. They require the use of the add-on DSP module. The inputs and outputs are directly connected to the inputs and outputs of the DSP on this DSP module.

While the TOSLink connectors are connected to the DSP they do not work independently if you not only want to process the audio in the DSP, but also forward the audio data to the amplifier outputs. To implement this, the audio data from the Pi are being replaced by the audio data from the TOSLink input. This requires the Pi to deliver audio data to the DSP. If there is no playback on the Pi, the DAC and amplifier on the Amp100 won't work.

We have created a small program that outputs a dummy data stream on the Pi. It is open source and can be downloaded from Github. There is no individual support for this script from us. You might post in our forum to discuss potential problems with the community.

We recommend the use of the TOSLink inputs/outputs only to users with some understanding of DSP programming as you might have to create your own DSP profile to use them.