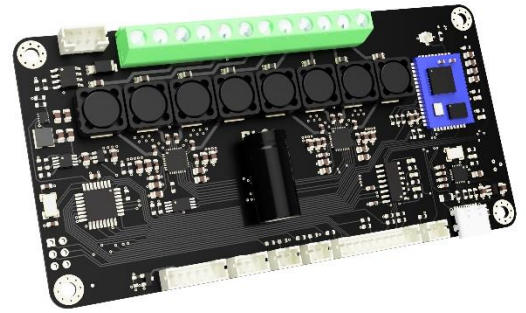


ZOUDIO AIO438

- **4 channel class-D amplifier**
- **Bluetooth V5.0 APT-X / A2DP / AAC**
- **Digital Signal Processor**
- **Windows™ configuration tool**
- **High power, high efficiency, low distortion**
- **Small footprint**



Product description

High performance speaker building has never been easier. The ZOUDIO AIO438 combines all modern features in one easy to use and affordable module. The included wiring harness makes installation quick and reliable. The compact form factor allows for installation in nearly every speaker. Due to its high efficiency it puts out a lot more power than its size suggests. Besides long-range Bluetooth streaming, wired input is supported. The DSP allows for powerful filtering, in some cases replacing a big and expensive passive crossover altogether. Settings can easily be changed using the Windows™ configuration tool.

Direct product link (purchase, downloads, pictures): www.zoudio.com/product/aio438

Features

Amplifiers

- 2x Texas Instruments **TAS5825M** (successor of the TPA3116/TPA3118 with lower distortion and built in DSP)
- Output power up to **4x 38W (4Ω)**, 2x 65W (2Ω) or 2x38W (4Ω) + 1x 65W (2Ω)
- Automatic **thermal foldback** and recovery for sustained power

Connectivity

- **Bluetooth V5.0** APT-X / A2DP / AAC with onboard antenna
- **Optional external antenna** can be used (R34 must be removed to disconnect the onboard antenna)
- **Wired** analog input

Power

- Wide range of accepted power supplies: **5 to 24V**
- **Low idle power** consumption, ideal for battery powered applications
- Programmable shutdown voltage and low power indication

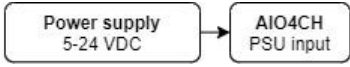
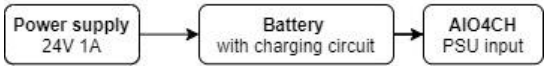

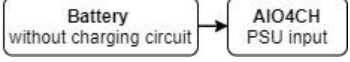
Settings

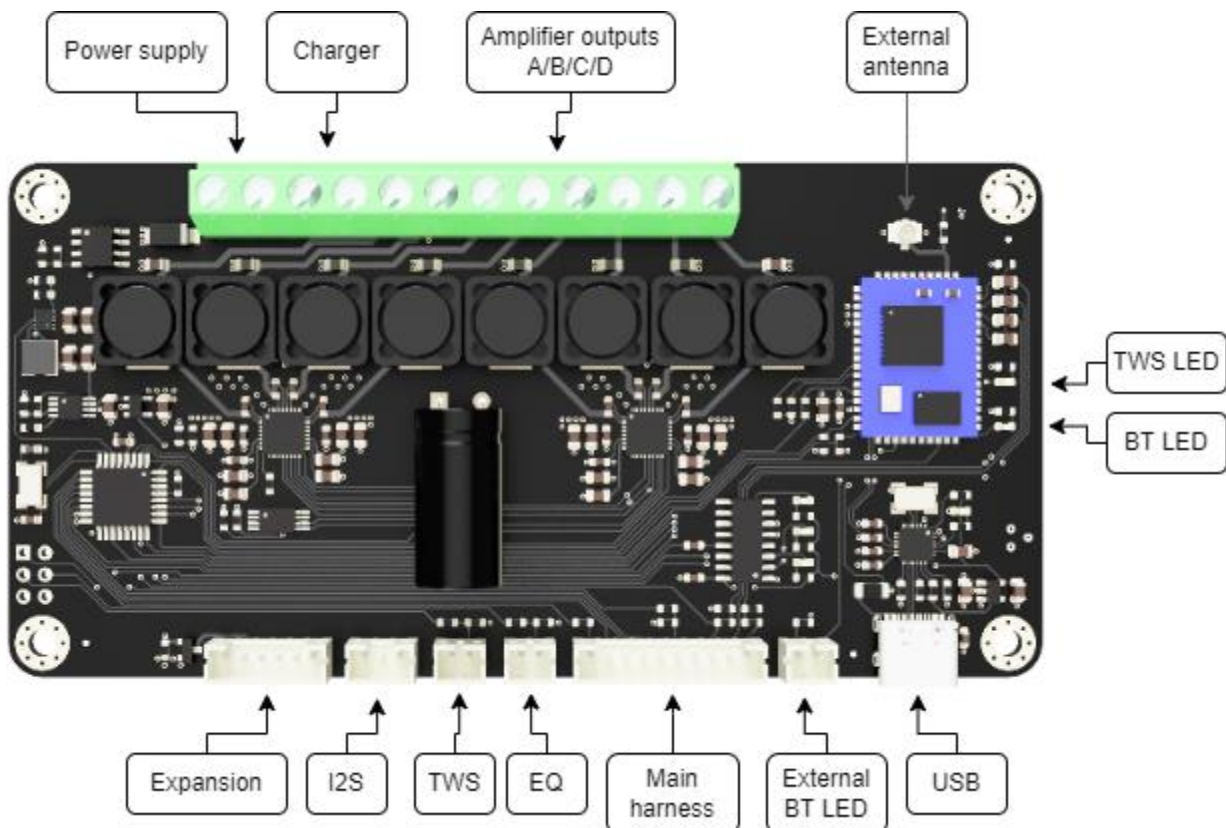
- **Input mixer** can be changed per 2 channels (left/right/mono)
- 8 general filters (**equalizers**) and 5 filters per channel (**crossovers**)
- 2 equalizers that can be toggled with the **EQ button** (e.g. indoor/outdoor, bass-boost)
- **Dynamic** (volume dependent) **equalizers**
- Programmable **delay** per channel
- Output configurable as **4.0 / 2.0 / 2.1**
- All settings can be changed using the **configuration tool for Windows™**, which can be downloaded via www.zoudio.com/configtool
- **Advanced features are available for large orders** (>50 pieces). This includes, but is not limited to, custom Bluetooth name, modified firmware, limiters, special connectors/cables and pre-programmed boards.

Specifications

Parameter	Min	Typ	Max	Unit	Notes
Power supply voltage	4.5		26.4	Volts	
Operating temperature	-10		+70	Celsius	
BT range		15		Meters	Onboard antenna, line-of-sight
Analog input voltage			2.0	Volts	Single-ended
THD+N			0.05	%	1KHz sine at 1W, 12V
Switching frequency		768		KHz	1SPW modulation
Output power per channel (BTL)			8	Watt	8R, 12V, 1% THD+N
			16	Watt	4R, 12V, 1% THD+N
			30	Watt	8R, 24V, 1% THD+N
			58	Watt	4R, 24V, 1% THD+N, thermally limited
Idle power		79		mA	12V, all channels enabled
		88		mA	24V, all channels enabled

Connections

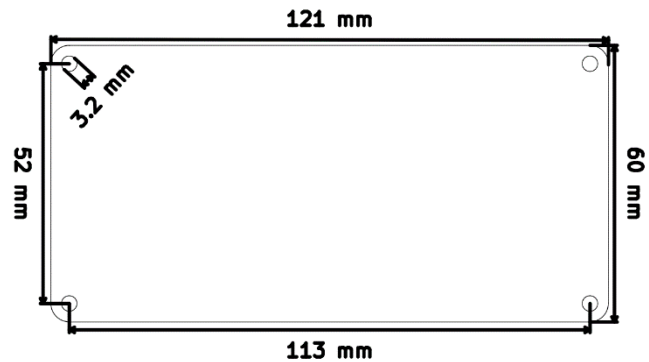
Power configuration	Recommended
	-12V 5A+ -19V 6A+ -24V 7A+
	-Sure BCPB2/BCPB3/BCPB4
	-6/12/18V lead-acid (24V not supported!)
	-Protected lithium packs: 2-6S Li-Ion/Li-Po, 2-7S LiFePO4
	<i>Note: board has no charging circuitry. CHG input is connected parallel to the PSU input for easy wiring of an external charger</i>



Name	Description
Expansion	Reserved for future use
I2S	I2S header, contact Zoudio for details.
TWS	TrueWirelessStereo. Will be enabled in a future firmware update.
EQ	Toggles the last two equalizer filters. Will be enabled in a future firmware update.
Main harness	Contains: - Power status LED: Red = low battery, Green = normal operation - Volume knob: Short press = turn off/on, Long press = enter pairing - Aux: 3.5mm analog input
BT LED	On = connected
USB	Connect to host PC
TWS	Reserved for future use
External antenna	U.FL connector for external antenna. If used, de-solder R34 to disconnect the onboard antenna.

Dimensions

-Height: 18 mm



Disclaimers

- Wrong usage of this product will void your warranty
- For questions, remarks and/or custom orders please visit ZOUDIO.com and contact us

Revisions

Date	Revision	Change
7 nov 2021	0.1	Document release
4 apr 2022	0.2	Update EQ filter amount Update output power info Add external antenna information Add configtool link Add connection diagram and table