

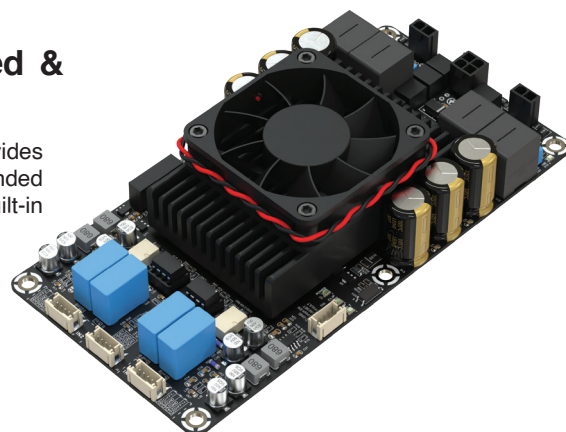
AAM8

2 x 300W Audio Amplifier (DC32-48V Single-ended & Differential Analog Input) Module TPA3255 x 2

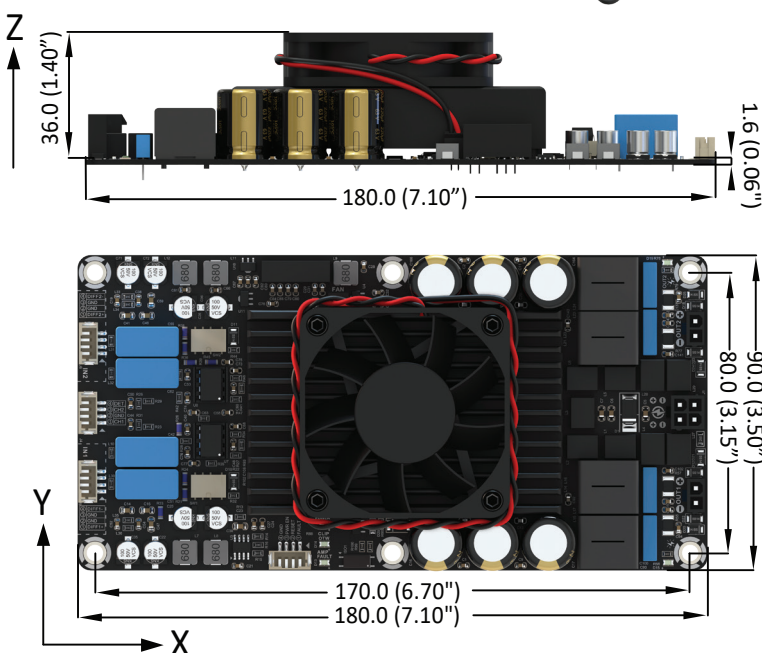
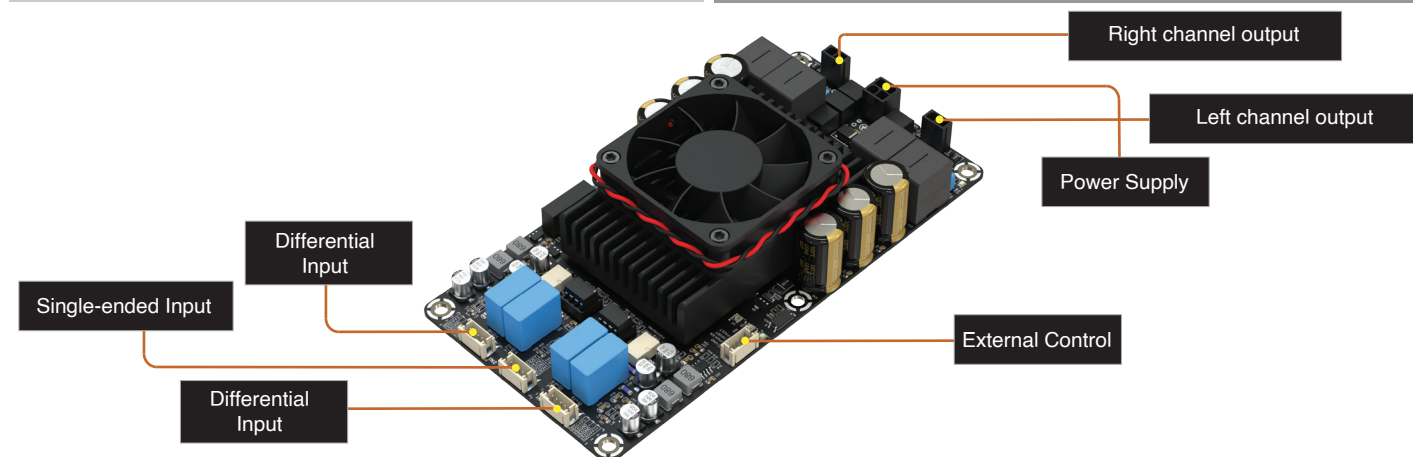
The AAM8 Audio Amplifier Module is a dual-channel Class-D amplifier that provides high efficiency, low distortion, and stable high-power output. It supports single-ended and differential input, operates on a 32–48 VDC power supply, and includes built-in protection features for safe and reliable use in professional audio applications.

Features:

- Support Single-ended and Differential Inputs.
- Certified with FCC and CE.
- Long Term Manufacturing Plan (10 Years).
- Undervoltage protection threshold is 30VDC.
- Overvoltage protection threshold is 50VDC.



Specification(s) :	
Supply Voltage	: 32VDC - 48VDC
Input Channel(s)	: Single-ended and Differential
Output Channel(s)	: Dual-channel
Output Power	: 2 x 300Watts
Product Size	: 180.0 (W) x 90.0 (D) x 38.0 (H) mm : 7.09 (W) x 3.54 (D) x 1.50 (H) inch
Net Weight	: 454 g ± 10 g / 16.02 oz ± 0.35 oz



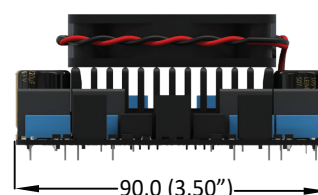
Mechanical Drawing

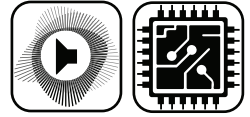
(Nominal Dimension, mm(inch))

Note: This layout image is for illustrative purposes only and not to a 1:1 scale.

	Tolerance
Z-axis direction (Components)	+1.0mm / +0.04inch -0.0mm / -0.00inch
X, Y-axis direction (PCB Outline)	±0.5mm / ±0.02inch
X, Y-axis direction (Vias & Holes)	±0.10mm / ±0.004inch

*PCB thickness 1.6mm ± 0.016mm.





Precautions

Safety Precautions



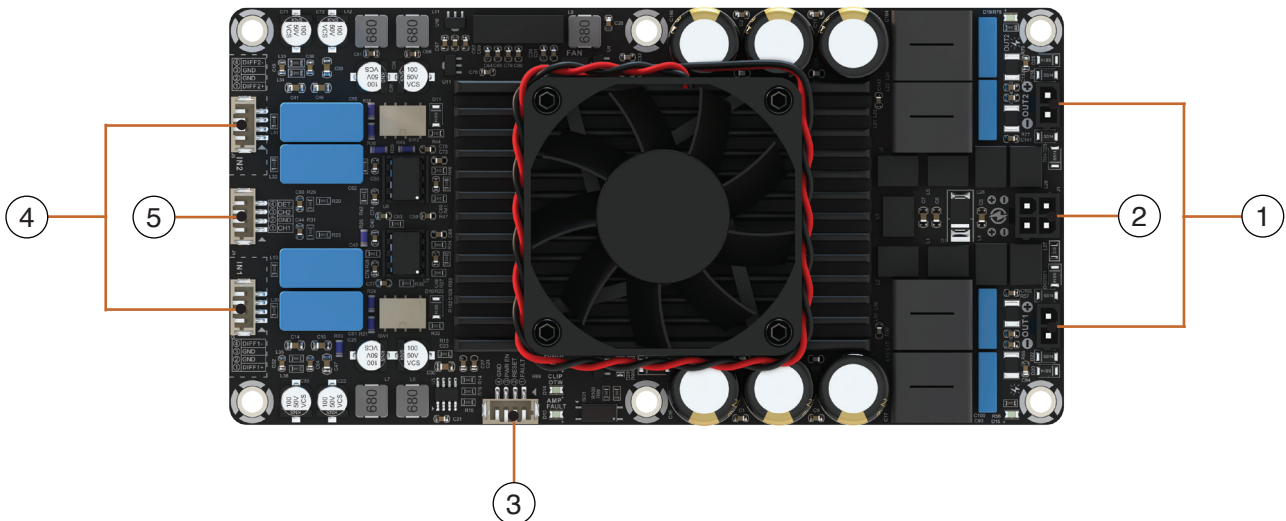
CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

When using the AAM8 module, prioritize safety for the board, connected devices, and user well-being. Verify power supply voltage and current meeting specifications to prevent damage or hazards. Disconnect power before handling cables to avoid electric shock. When connecting external audio sources, ensure they're powered off to prevent surges or interference. Verify compatibility with board's input specs to avoid overload or distortion. Follow assembly instructions closely, checking connections to prevent issues, ensuring safe operation, and maximizing performance and lifespan.

Connector(s) Layout

AAM8 Module



Connector(s):

1. Dual-channel Output (Mini-Fit 3.0, Single Row 2 Circuits):

- Used for speaker connection.
- Consist of left and right speaker channels (OUT1 & OUT2).

2. Power Supply Input (Mini-Fit 3.0, Dual Row 4 Circuits):

- DC supply voltage range (32VDC - 48VDC).
- Undervoltage protection threshold is 30VDC.
- Overvoltage protection threshold is 50VDC.

3. External Control Port (PH-2mm-4 Circuits):

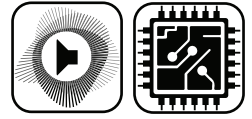
- During normal operation, the voltage between "FAULT" pin and "GND" pin is 3.3 VDC.
- Short the "POWER_EN" pin to "GND" pin to shutdown the power supply and the amplifier.
- Short the "RESET" pin to "GND" pin to shutdown the amplifier only.

4. Differential Input (PH-2mm-4 Circuits):

- Used for differential audio input.
- Provide a compact interface for reliable signal transmission with effective grounding and noise reduction.
- For differential input mode, "DET" pin must be shorted to "CH2" pin using a shorting cap on the single-ended input connector.

5. Single-ended Input (PH-2mm-4 Circuits):

- Used for single-ended audio input.
- Use our dedicated analog audio input cable (accessories).



AAM8 Electrical Characteristic

Electrical performance specifications are typical at +25°C, powered by 36V or 48V, unless otherwise noted. Specification subject to change without notice.

Parameters	Conditions	Min.	Typ.	Max.	Unit
Power Supply Voltage	DC Power Supply	32	-	48	VDC
	DC Power Supply (Under-voltage & over-voltage protection threshold)	30	-	50	VDC
Idle Power	Power supply= 36V, without input signal	4.32	5.4	6.48	W
	Power supply= 48V, without input signal	6.72	8.16	9.78	W
Efficiency	Power supply= 48V,1kHz,4 Ω ,Test signal=2Vrms,Power out=2x300W,Single ended(J4)	-	86	-	%
	Power supply= 36V,1kHz,4 Ω ,Test signal=1.5Vrms,Power out=2x150W,Single ended(J4)	-	87	-	%
Load impedance	-	3.4	4	-	Ω
Storage temperature	-	0	-	45	°C

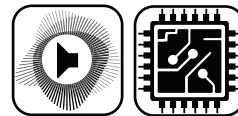
AAM8 Audio Characteristic

Audio performance specifications are typical at +25°C, powered by 48VDC, unless otherwise noted. Specifications subject to change without notice.

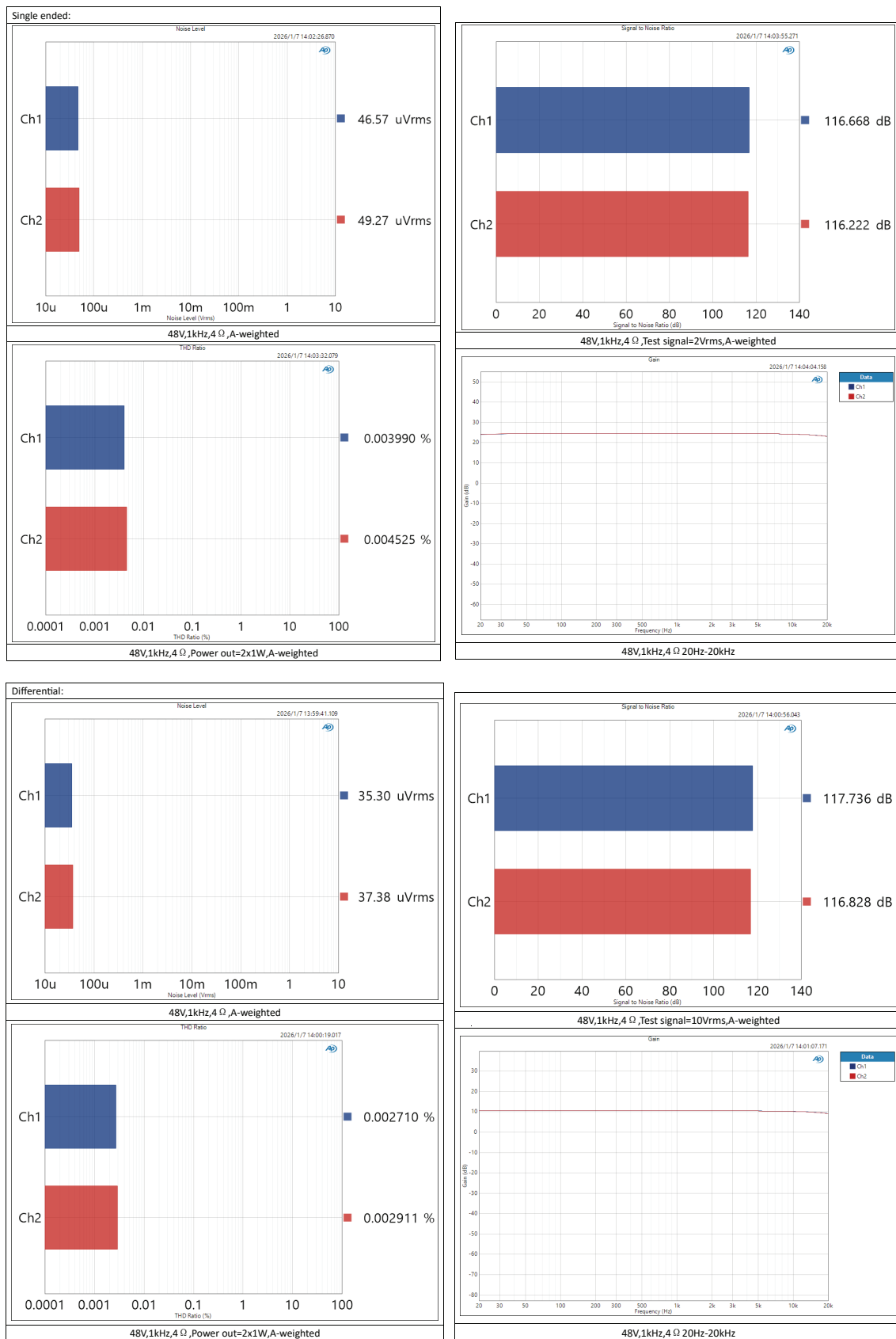
Parameters	Conditions	Min.	Typ.	Max.	Unit
Gain	1kHz,4 Ω ,Test signal=2Vrms,Single ended(J4)	-	24.4	-	dB
	1kHz,4 Ω ,Test signal=10Vrms,Differential(J5&J6)	-	10.3	-	dB
Input sensitivity	1kHz,4 Ω ,Test signal=2Vrms,Power out=2x300W,Single ended(J4)	-	2	-	Vrms
	1kHz,4 Ω ,Test signal=10Vrms,Power out=2x300W,Differential(J5&J6)	-	10	-	Vrms
Noise Level	1kHz,4 Ω ,Test signal=0mVrms,Single ended(J4),A-weighted	-	46.6	-	μ Vrms
	1kHz,4 Ω ,Test signal=0mVrms,Differential(J5&J6),A-weighted	-	36.2	-	μ Vrms
Total Harmonic	1kHz,4 Ω ,Power out=2x1W,Single ended(J4),A-weighted	0.003	0.004	0.005	%
Distortion (THD)	1kHz,4 Ω ,Power out=2x1W,Differential(J5&J6),A-weighted	0.002	0.003	0.004	%
Signal-to-Noise Ratio (SNR)	1kHz,4 Ω ,Test signal=2Vrms,Single ended(J4),A-weighted	-	116.9	-	dB
	1kHz,4 Ω ,Test signal=10Vrms,Differential(J5&J6),A-weighted	-	117.6	-	dB
Crosstalk	1kHz,4 Ω ,Test signal=2Vrm,Single ended(J4)	-69	-80	-	dB
	1kHz,4 Ω ,Test signal=10Vrms,Differential(J5&J6),A-weighted	-84	-92	-	dB
Frequency Response	Test signal =2Vrms,20Hz-20kHz,4 Ω ,Single ended(J4) and Differential(J5&J6)	-	± 1	-	dB



Note: AAM8 do provide reverse polarity protection, but extreme caution must be exercised to ensure correct polarity during connection. Permanent damage caused by reverse polarity will not be covered under warranty.

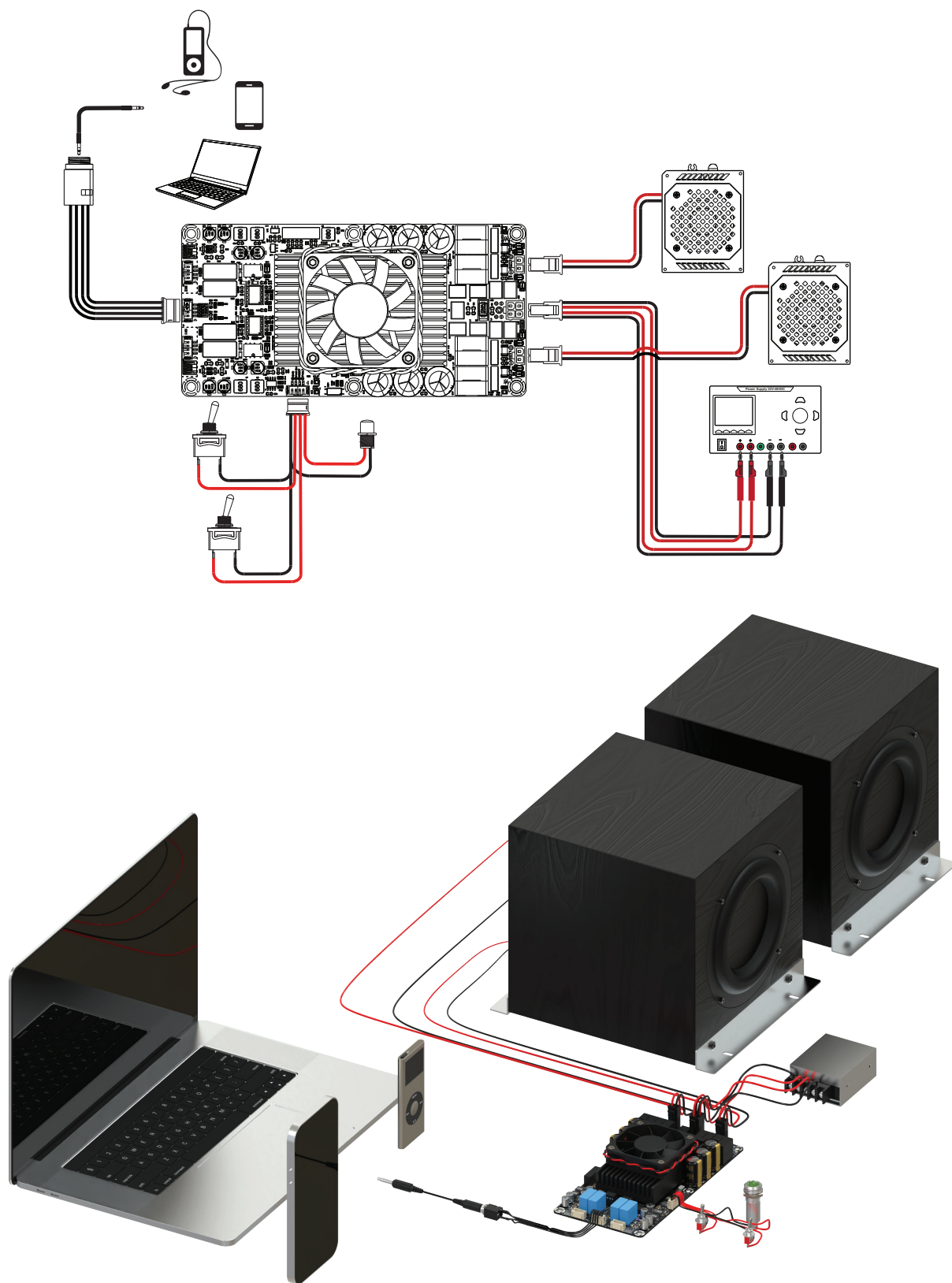


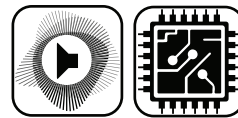
AAM8 Performance Graph



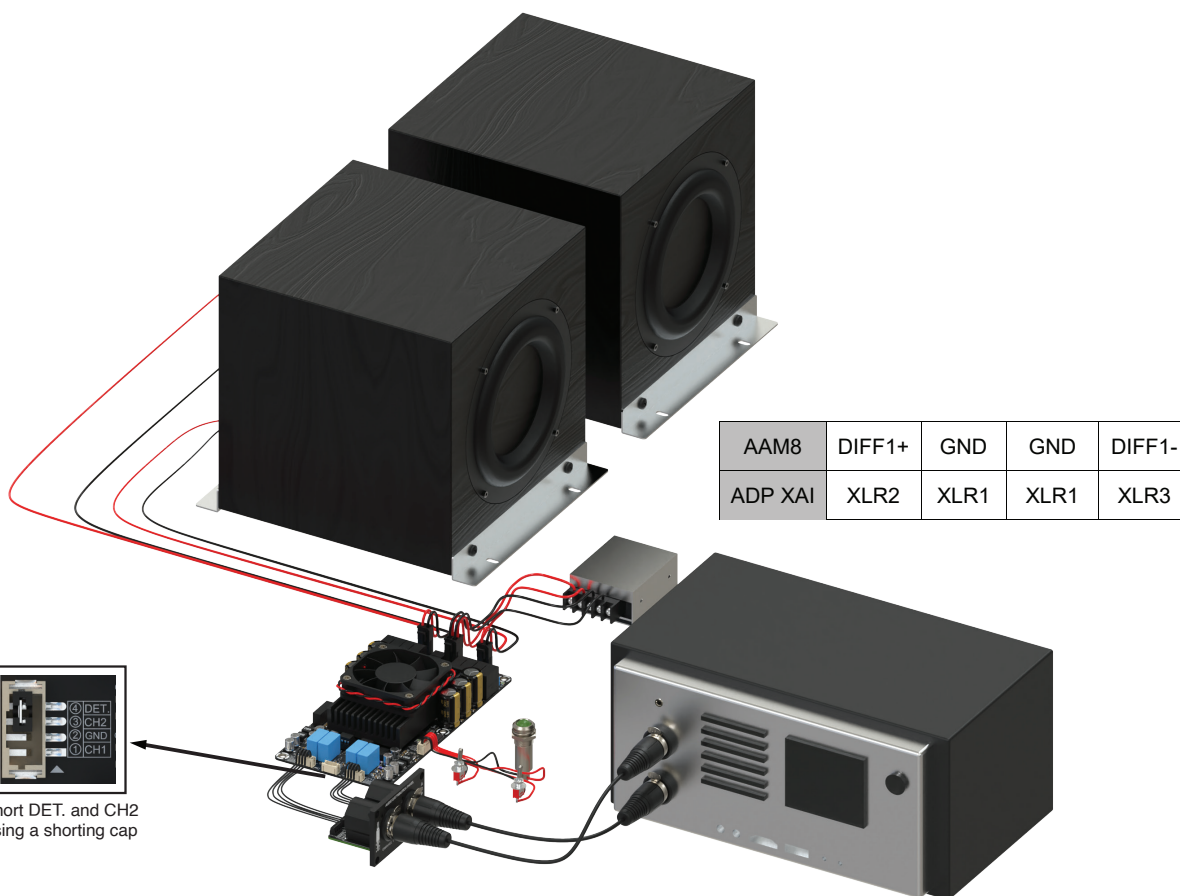
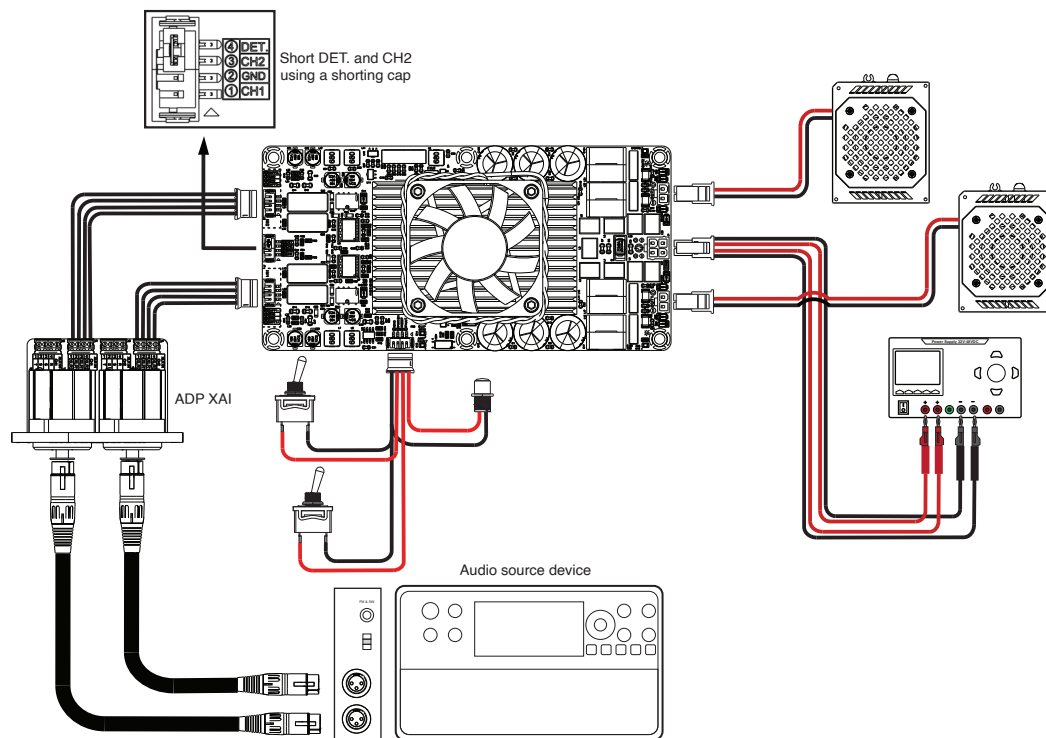
Wiring Connection Diagram

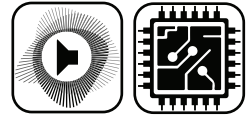
1. Single-ended Input





2. Differential Input





Connection Limitation and Warnings

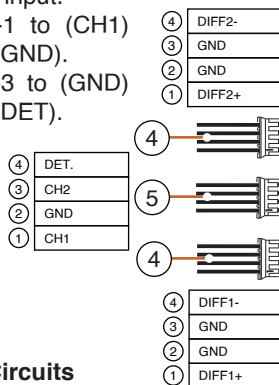
1. The use of 4-cell lead acid batteries or lithium batteries is not supported. When the battery is fully charged, it will trigger the amplifier's overvoltage protection.
2. Only one signal input method is allowed for either single-ended input or differential input; simultaneous use of both is prohibited.
3. Strictly prohibited from bridging the amplifier into single-channel mode.

Port(s) Layout

Connecting the AAM8 Module

5. PH-2mm-4 Circuits

- Single-ended input.
- Connect Pin-1 to (CH1) and Pin-2 to (GND).
- Connect Pin-3 to (GND) and Pin-4 to (DET).

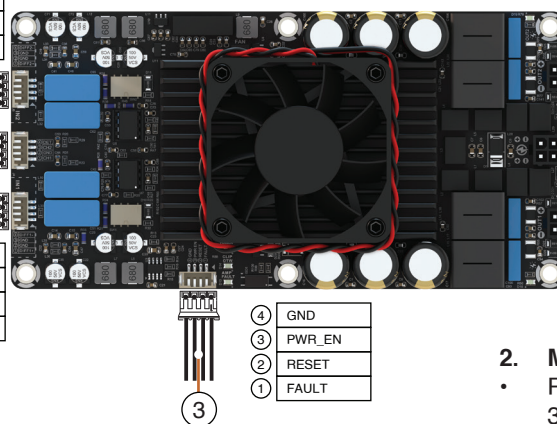


4. PH-2mm-4 Circuits

- Differential input.
- Connect Pin-1 to (DIFF1+) and (DIFF1-).
- Connect Pin-2 and Pin-3 to GND
- Connect Pin-4 to (DIFF2+) and (DIFF2-)

1. Mini-Fit 3.0, Single Row 2 Circuits

- Speaker Output.



3. PH-2mm-4 Circuits

- Specified for external control port.
- Connect Pin-1 to (FAULT), Pin-2 to (RESET), Pin 3 to (PWR_EN) and Pin-4 to (GND).

2. Mini-Fit 3.0, Dual Row 4 Circuits

- Power supply voltage range from 32 to 48 VDC.

Distributed by:



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