

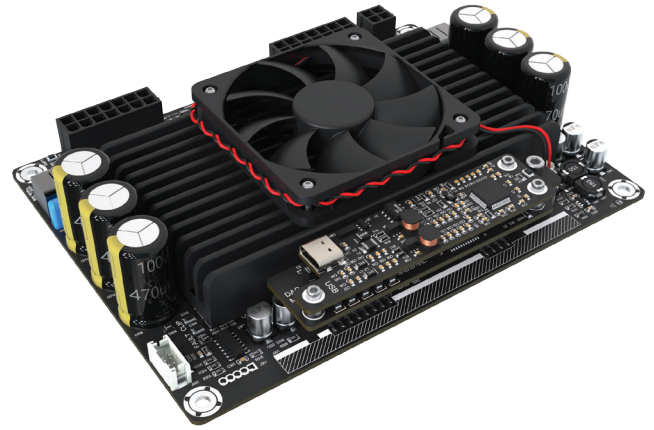
# GAB8

## 10 x 50W Class D 7.3 / 5.3 Configurable Audio Amplifier Board - TPA3244

The GAB8 is a compact and powerful audio amplifier board that is designed for game machine applications with a total output power of 500 watts (10 x 50 W).

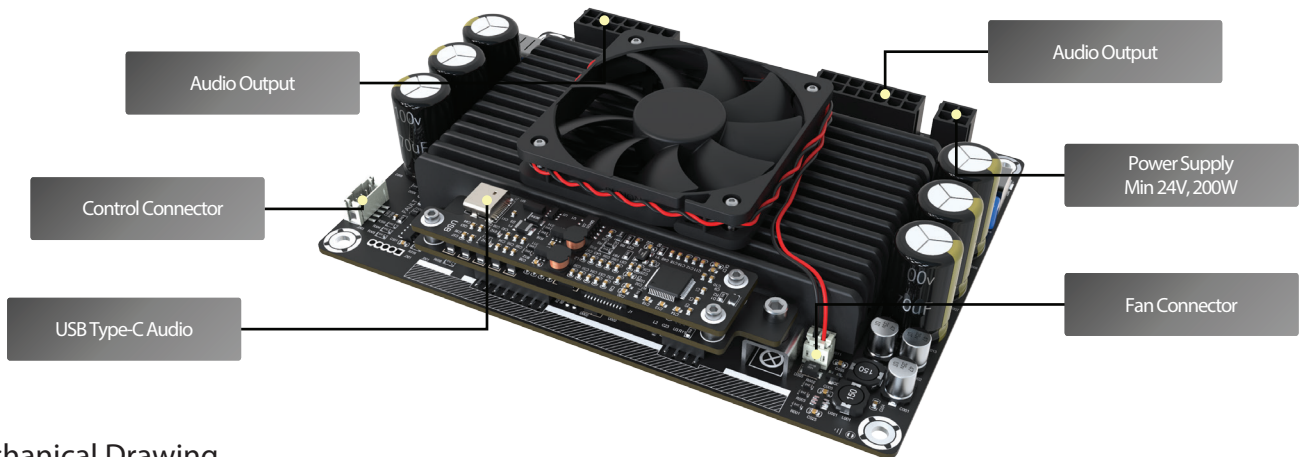
**Features:**

- 7.1 USB UAC2.0 Codec as Audio Input.
- Versatile Output Modes: Choose from 7.3 or 5.3 Configurations.
- Supporting External Plug-and-Play Modules as Daughter Boards.
- Higher Output Power to 75W Peak with Fan Installed and DC 24V Supply.

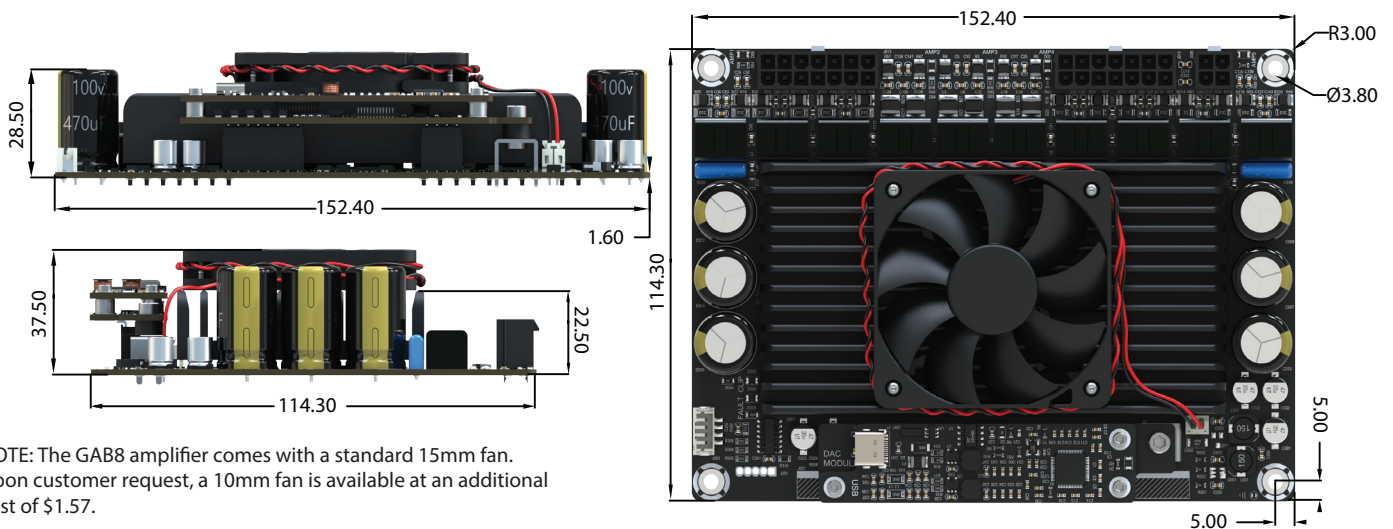


Parameters:	
Supply Voltage	(15V to 30V) Mini-Fit Jr 2x2 CKT
Output Channel	Mini-Fit Jr 2x7 CKT
Output Power	50W peak per Channel without Fan Installed

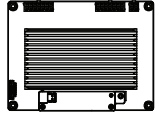
System	Audio 7.3 / 5.3 System
Audio Input	USB Type-C
Product Size	152.40 (w) x 114.30 (d) x 28.60 (h) mm
Weight	443g



### Mechanical Drawing (Nominal Dimensions, mm)



NOTE: The GAB8 amplifier comes with a standard 15mm fan. Upon customer request, a 10mm fan is available at an additional cost of \$1.57.



## Precautions

### Safety Precautions

Start by thoroughly reading the user manual provided with your GAB8 amplifier. It contains essential safety information and guidelines specific to your device.

- Check that the impedance (ohms) of your speakers matches the GAB8's requirements. Using speakers with the incorrect impedance can damage the amplifier or speakers.
- Be cautious with volume levels, especially when testing or initially setting up your system. Sudden loud sounds can harm your hearing and potentially damage your speakers.
- Ensure that GAB8 is properly grounded and connected to a stable power supply. If you are not going to use GAB8 for a long time, be sure to disconnect GAB8 from the power supply to prevent any damage or energy wastage.
- If you have children, secure or place the amplifier out of their reach to prevent accidents and potential damage.



## CAUTION

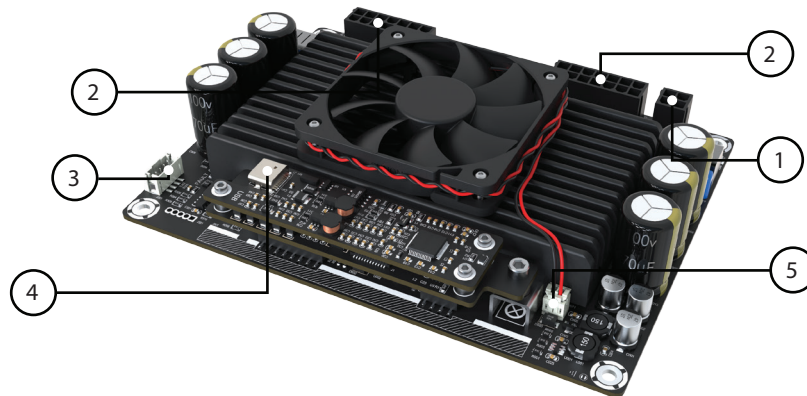
Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

### Installation Precautions

- Organize and secure cables to prevent tripping hazards and accidental disconnections. Use cable clips or ties to keep wires neat and tidy.
- Place GAB8 securely on a stable surface. Serious damage to this product may result if it falls. Do not allow anything to rest on the GAB8. Do not place GAB8 where a person can step or trip on GAB8.
- Place GAB8 in a location with adequate ventilation to prevent heat buildup and prolong the life. Do not place GAB8 near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- If the GAB8 is rack-mounted or wall-mounted, ensure that it is securely attached according to the manufacturer's instructions.
- Maintain records of your purchase and warranty information. If you encounter problems or have questions, contact the manufacturer's customer support for assistance.

## Connectors Layout

### GAB8 Modules



#### 1. Power Supply

GAB8 supports a wide voltage range of 15V to 30V. It's crucial to connect a compatible power source within this voltage range to ensure the board functions correctly. For the best results, a 24V switching power supply is recommended. Refer to [Page 7] of the documentation for specific power supply recommendations.

#### 2. Audio Output

Features a 7.3 speaker configuration, providing audio output for gaming and entertainment needs.

#### 3. Control

"SHDN" and "MUTE" pins operate on an active low basis; shorting them to GND triggers shutdown or mute mode.

#### 4. USB Audio

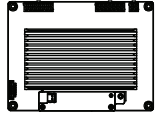
GAB8 can function as an audio input for the 7.1 USB UAC2.0 codec internal circuit. This feature allows you to connect a wide range of audio sources and supporting audio with 24-bit depth and a sampling rate of 48,000Hz, providing studio-quality audio.

#### 5. Fan

A robust heatsink is mounted on GAB8 for heat dissipation. You can connect the fan to a designated port. The fan will activate when the heatsink temperature reaches 45°C, ensuring optimal performance, especially during extended use or when operating GAB8 at peak power levels.

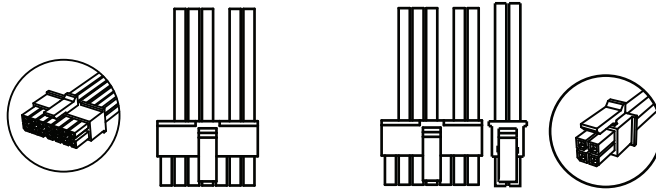


CAUTION: GAB8 does not provide reverse polarity protection. Therefore, extreme caution must be exercised to ensure correct polarity during connection. Permanent damage caused by reverse polarity will not be covered under warranty.



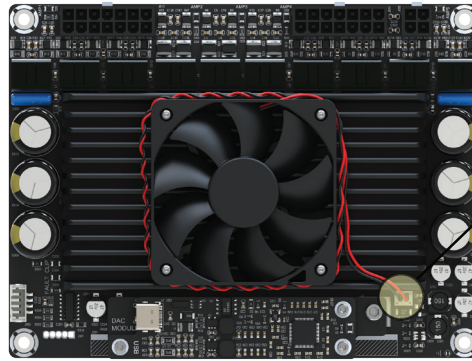
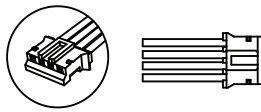
## Layout Ports And Control Connecting the GAB8

**Wire Kit - Audio Output**  
Details about the cables included as accessories with this product can be found in the appendix section. Refer to [Page 8] for information on this included cables.



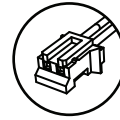
**Wire Kit - Power Cable**  
Details about the cables included as accessories with this product can be found in the appendix section. Refer to [Page 7] for information on this included cables.

**JST PH 8 Pin Cable**  
Please note that this cable is not included as a part of the cable accessories. These cables are considered standard items and can be purchased separately from various retailers or suppliers. However, you have the option to purchase as part of an accessory bundle.



Refer to the figure for a visual representation of the fan connector and the correct orientation of the cable's positive and negative wires.

**USB Type-C Cable**  
Please be aware that certain cables, while essential for use with this product, are not provided as part of the cable accessories. These cables are considered standard items and can be obtained separately from various retailers or suppliers.



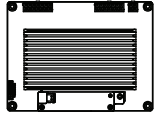
**Wire Kit - Fan Cable**  
Details about the cables included as accessories with this product can be found in the appendix section. Refer to [Page 9] for information on this included cables.

## Electrical & Audio Performance Parameters GAB8 Electrical Performance Parameters

Parameter	Conditions	Min.	Typ.	Max.	Units
Efficiency	10x50W@24V, 40hm, 1kHz	-	90	-	%
Minimum Load Impedance	Floating may lead to EMI issues	3	4	16	$\Omega$
Nominal Power Requirement	24V power supply recommended	150	350	750	W
Operating Voltage	4 $\Omega$ or higher, if resistance 3 $\Omega$ , use 20V or less	15	24	30	V
Standby Power	SHDN short to GND, Signal detected@24V, 0.13A	-	3.12	-	W
Idle Power	MUTE short to GND, Signal detected@24V, 0.53A	-	12.7	-	
Power Consumption	1/4 of max output power @4 $\Omega$ ,1kHz,24V	-	240	-	W

## GAB8 Audio Performance Parameters

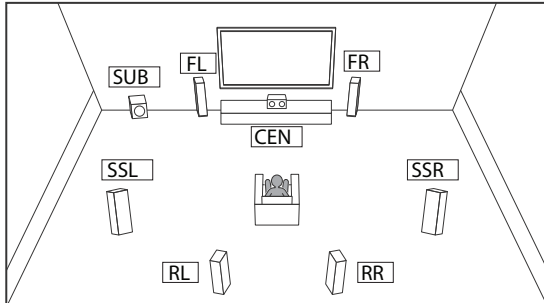
Parameter	Conditions	Min.	Typ.	Max.	Units
Output Noise Level	A-weighting, USB connection activated	-	169	-	$\mu$ V
SNR	10x50W@40hm, A-weighting	-	101	-	dB
THD+N	1W@4 $\Omega$ , 1kHz, / CH	-	0.18	-	%
	10W@4 $\Omega$ , 1kHz, / CH	-	0.14	-	
	50W@4 $\Omega$ , 1kHz, / CH	-	0.69	-	
DC Offset	-	-	10	-	mV



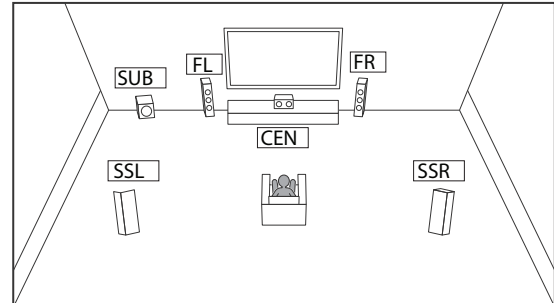
## Speaker Configurations

### Location of Each Speaker

7.1-Channel Speaker System



5.1-Channel Speaker System



Note: When you connect only one rear speaker, place the rear speaker directly behind the listening position.

As the subwoofer (SUB) does not emit highly directional signals, you can place it wherever you want.

### Names And Function of Each Speaker

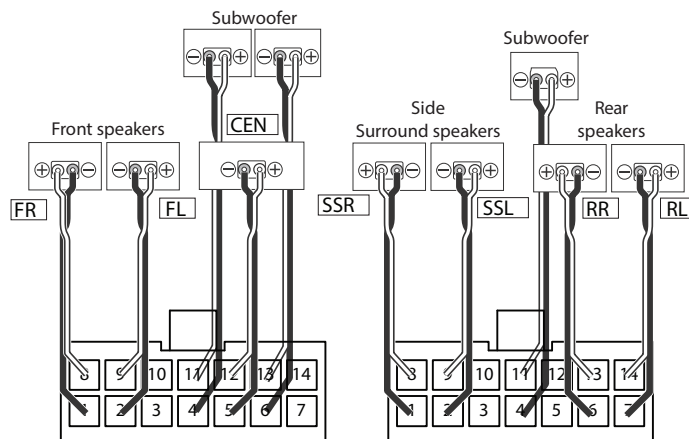
Abbreviations used	Speaker Name	Functions
FL	Front Left Speaker	Produces stereo sounds
FR	Front Right Speaker	from front left/right channel
CEN	Center Speaker	Produces vocal sounds from center channel
SSL	Side Surround Left Speaker	Produces sounds from side surrounds
SSR	Side Surround Right Speaker	left/right channel
RL	Rear Left Speaker	Produces sounds from
RR	Rear Right Speaker	rear left/right channel
SUB	Subwoofer	Produces LFE (low frequency effect) channel sounds and reinforces bass parts of other channels

## Speaker Configurations

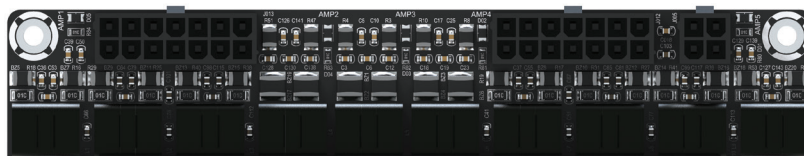
### 7.3-channel speaker system

\*Prior to connecting any cables, ensure that the power cable is not connected. This is crucial for safety during the setup process.


\*Before attaching speaker cables to the speaker terminals, double-check that wires from the speaker cables are not in contact with each other. This precaution helps prevent electrical interference and ensures proper connectivity.

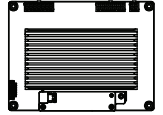


\*If you connect only one rear speaker, connect it to the L (+/-) terminals.



Note: A 7.3 system consists of seven main speakers (Front Left - FL, Center - CEN, Front Right - FR, Side Surround Left - SSL, Side Surround Right - SSR, Rear Left - RL, Rear Right - RR) and three subwoofers. In this configuration, each speaker should be connected individually to the audio source using appropriate wiring connection. Additionally, three subwoofers are employed for enhanced bass performance. In contrast, a 7.1 audio system includes the same seven main speakers as the 7.3 configuration, but it utilizes only one subwoofer dedicated to handling bass frequencies.

 NOTE: To configure your audio system for a 5.3 speaker setup, it's important to make specific adjustments. You will need to remove the Rear Left (RL) and Rear Right (RR) speakers that are present in a 7.3 system. Please ensure that you make secure and proper wire connections from the connector to each speaker in your chosen configuration to optimize your audio setup.



## Speaker Configurations

### Connecting to 7.1 Surround System and Setting up an 8-Channel Multi-Audio System:

**Connecting Hardware:** Connect the GAB8 amplifier to your PC's USB Type-C port using a Type-C cable. Plug in the power cable to the GAB8 amplifier and connect it to a power source to ensure the amplifier has power. Connect the speaker cables from all 8 speakers to their respective channels on the GAB8 amplifier to maintain audio balance.

**Configuring Audio Settings:** Right-click on the speaker icon in the Windows taskbar or go to the Sound settings in the Control Panel. Select "GAB8 WONDOM" as the playback device. Click on "Configure" under the GAB8 WONDOM device. In the Configure window, select "7.1 Surround" from the sound format dropdown menu to configure audio output for 7.1 channel surround sound. Test audio through your PC to ensure that sound is coming from all 8 connected speakers. Under "Advanced sound options," select 24-bit, 48000 Hz Studio Quality.

### Enabling 8-Channel Multi-Audio in Audacity:

**Open Audacity:** Launch the Audacity audio editing software on your computer.

**Enable Advanced Mixing Options:** Click on the "Edit" menu at the top of the Audacity window to reveal a dropdown menu. From this menu, select "Preferences." This will open the Audacity Preferences window. Inside the Audacity Preferences window, look for the "Import/Export" section in the left sidebar. Within this section, you will find various preferences related to importing and exporting audio files. Locate and tick the checkbox labeled "Use advanced mixing options." Enabling this option is crucial for working with multiple audio channels effectively.

**Prepare Your Audio File:** Before you can enable 8-channel multi-audio, you need to have an audio file with 8 separate audio tracks or channels. Ensure that your audio file is ready for importing into Audacity.


**Import the 8-Channel Audio:** Go back to the main Audacity window. Use the "File" menu to select "Import" and then "Audio." Locate and select your prepared 8-channel audio file from your computer's storage. Audacity will import this file, recognizing it as an audio track with multiple channels.


**Configure Each Channel:** After importing the audio file, you will see it represented as a single track in Audacity. Click on the dropdown arrow near the track's title to reveal the individual channels or tracks. You should see all 8 channels listed separately. Configure each channel according to your preferences. You can adjust volume levels, apply effects, or make any necessary edits to individual channels.

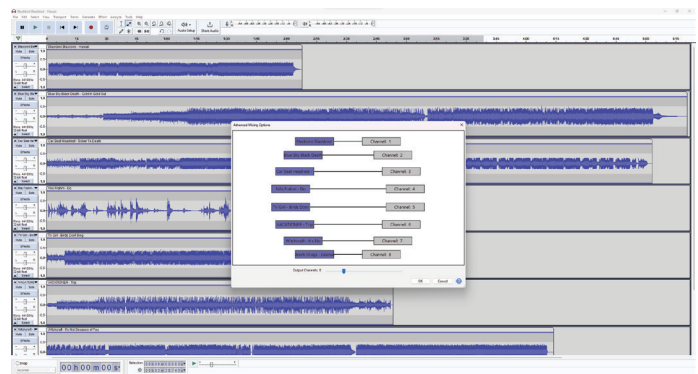
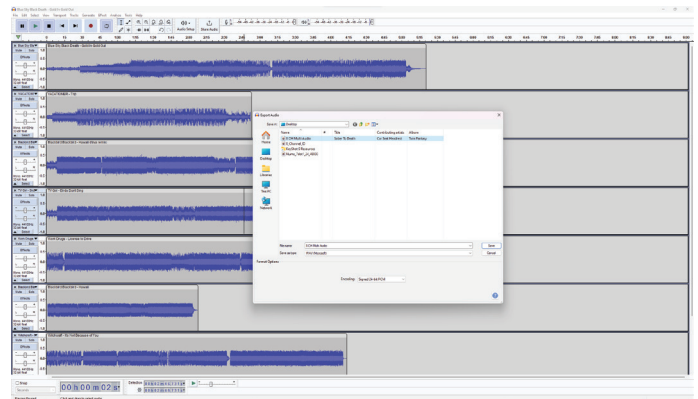
**Export as WAV:** Once you have configured the channels to your satisfaction, it's time to export the audio as an 8-channel WAV file. Go to the "File" menu and select "Export" and then "Export Audio." Choose a location on your computer to save the file and provide a name for it.

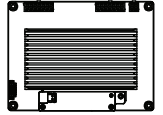
**Select the Appropriate Format:** In the export settings dialog, make sure to save as type "WAV (Microsoft)" and select on encoding dropdown "Signed 24-bit PCM" as the export format. This format is suitable for preserving high-quality audio. Click the "Save" button to confirm your export settings and save the audio file.

**Playback in Windows Media Player:** Once the 8-channel audio file is saved, you can open it in Windows Media Player or any other compatible media player. When played, each channel will be heard separately, providing an 8-channel audio experience. In this setup, it's important to note that all speakers will act as full range, capable of reproducing the entire audio frequency spectrum,

 **NOTE:** Multi-audio system typically requires a specific number of speakers to match the number of audio channels. However, if you have only 2 or 3 speakers, you can still work with limitations to enjoy multi-audio content. In Audacity, identify the channels or tracks in the audio content and assign them to the available speakers as per your preference. For example, if there are 5 audio channels but only 2 speakers, you can assign 3 channels to the first speaker and the remaining 2 channels to the second speaker. Audacity provides the flexibility to customize channel placement.





 **NOTE:** You can also export a track into Audacity and set their preferences for each channel to play 7.1 LPCM, allowing for further customization of the audio playback. After importing the audio file, you will see it represented as a single track in Audacity. Click on the dropdown arrow near the track's title to reveal the individual channels or tracks. Ensure that you have 8 channels available for playback. These steps should help you set up and configure your GAB8 amplifier for 7.1 surround sound on your PC.



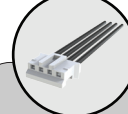




## Accessories

### Supplied Accessories

 <p><b>Power Cable</b></p> <p>Usage: Connect to compatible power source.</p> <p>Input: Voltage range of 15V to 30V</p> <p>Length: 500mm±50mm</p>	 <p><b>Audio Output Cable</b></p> <p>Usage: Audio output for gaming and entertainment needs.</p> <p>Length: 200mm±10mm</p>	 <p><b>Fan</b></p> <p>Usage: Sissipate heat from the GAB8's heatsink, ensuring optimal performance during extended use.</p> <p>Size: 60x60x10(mm)</p> <p>Wire Length: 290mm±20mm</p>	 <p><b>USB Type C Cable Clip</b></p> <p>Usage: Secure and prevent any unintended movement of the USB Type-C cable.</p> <p>USB Type C Cable Size: &lt;Ø5mm</p>
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### Optional Accessories

 <p><b>JST PH 4 Pin Cable</b></p> <p>Usage: Control Function.</p> <p>Length: The cable length may vary and depends on your specific requirements.</p>	 <p><b>Universal Wire Connector</b></p> <p>Usage: Simplifies the connection of GAB8's audio output cable to individual speaker cables.</p> <p>Size: 38.4mmx13.4mm x14.5mm</p>	 <p><b>L Bracket</b></p> <p>Usage: Mounting and securely holding the GAB8 in place.</p> <p>Size: 6.0"x4.5"</p>
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## Warranty Terms and Product Usage Restrictions

Wondom products come with a one-year warranty starting from the date of purchase. Customers are responsible for the cost of returning the goods to the seller, and by making a purchase, you agree to this condition. Due to the nature of DIY products, visible damage or use on screw holes or tinning of solder pads directly invalidates the warranty. Damage caused by the use of incorrect power sources, such as exceeding the specified voltage range or reverse polarity, is not covered under warranty. All Wondom products undergo thorough testing before shipment. We do not accept bulk returns after a bulk purchase. If you are unsure of the quantity you need, please purchase the appropriate quantity as needed. All Wondom products are intended for DIY use only and do not support any industrial applications. The rated operating temperature range is -10-50°C.

Distributed by:



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Designed by:



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 or iMessage.)



## Purchasing Rights

When you're considering buying our product in large quantities, here's what you need to know:

**Bulk Purchase Rights:** The number of products you can buy at once is determined by your single purchase, not your total annual purchases.  
**Customization and Pricing:** If you wish to customize our product, the options and costs depend on the quantity you purchase in a single transaction.

**Retail Purchases:** For individual purchases, you can only buy our product through our authorized distributor platforms. Please note that the listed prices on these platforms may change over time.

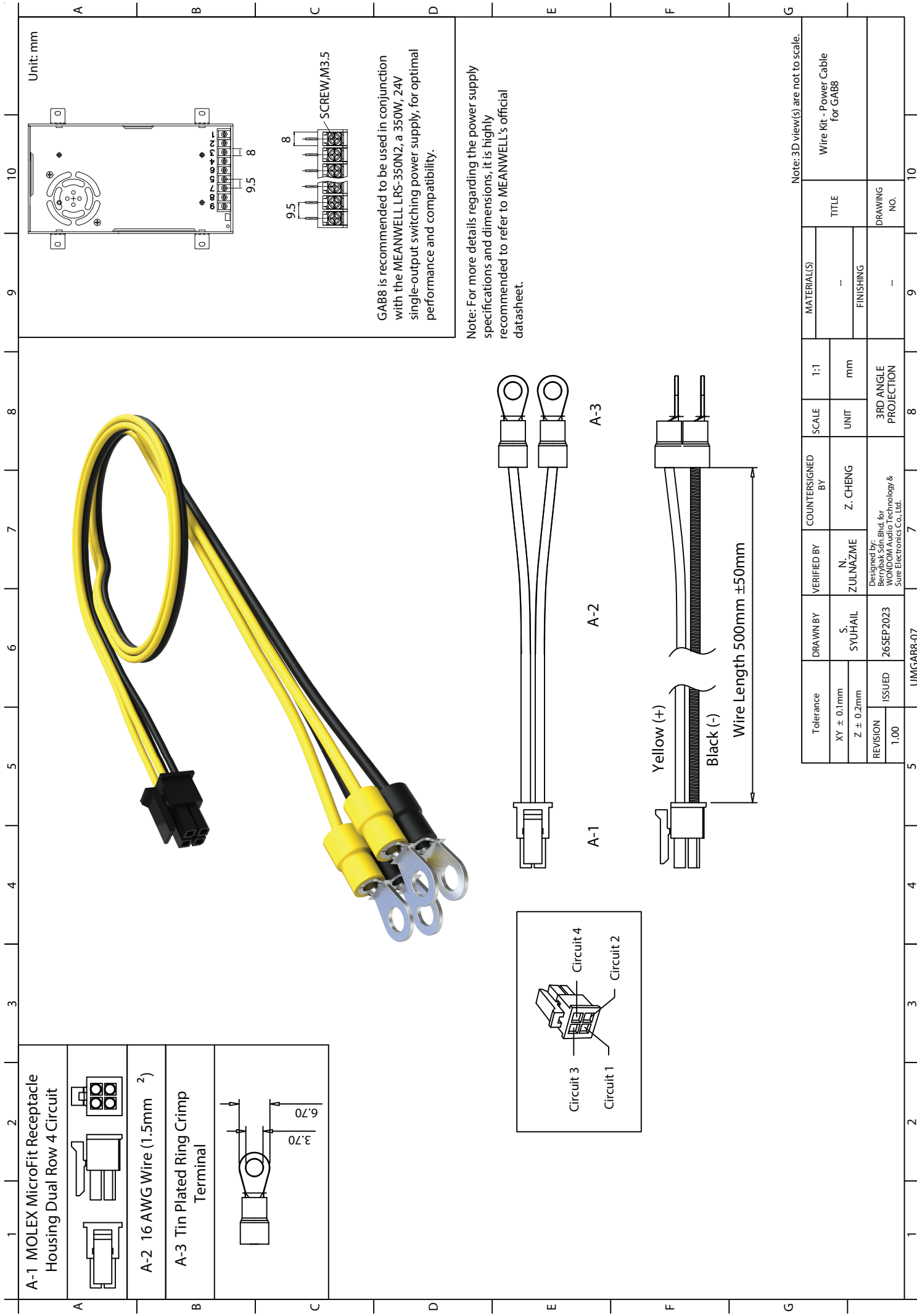
**Bundled Pricing for 100 Units:** When you buy a minimum of 100 units in one transaction, you may qualify for a special bundled price for that quantity.

**Customization for 500 Units or More:** If you're planning to purchase 500 units or more, you have the option to customize various aspects of the product. This includes changes to the product's appearances, such as color, size, logo, cable length, and packaging materials. Additionally, you can customize the firmware by altering the product string. We also offer a range of services, which encompass wire kit, panel, cabinet, and mount bracket design. To explore these customization options further, please contact us via email for detailed information and to discuss your specific requirements.

**Standard Price List:** For orders of 500 units or more, you can request our standard price list by reaching out to our customer support.  
**Pricing for Bulk vs. Bundled:** It's important to note that the price for buying in bulk is not significantly different from the bundled price for 100 units.

## Origin and Design Location

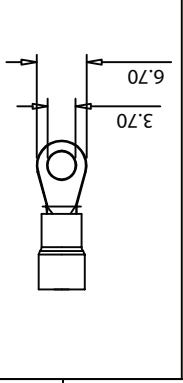
All Wondom products are designed, manufactured, assembled, and shipped from China. The products' country of origin is China. We do not provide any services for sales, shipping, or manufacturing from other regions.



A-1 MOLEX MicroFit Receptacle Housing Dual Row 4 Circuit

A-2 16 AWG Wire (1.5mm<sup>2</sup>)

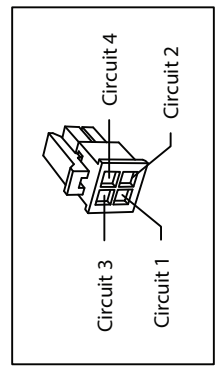
A-3 Tin Plated Ring Crimp Terminal



GAB8 is recommended to be used in conjunction with the MEANWELL LRS-350N2, a 350W, 24V single-output switching power supply, for optimal performance and compatibility.

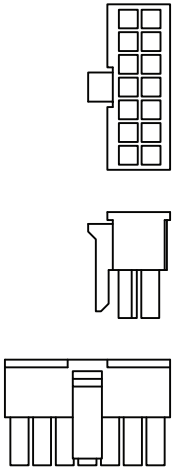
Note: For more details regarding the power supply specifications and dimensions, it is highly recommended to refer to MEANWELL's official datasheet.

Note: 3D view(s) are not to scale.



Tolerance	DRAWN BY	VERIFIED BY	COUNTERSIGNED BY	SCALE	MATERIAL(S)	
	XY ± 0.1mm	S. SYUHAIL	N. ZULNAZME	1:1	Wire Kit - Power Cable for GAB8	
	Z ± 0.2mm		Z. CHENG	UNIT	TITLE	
REVISION	ISSUED	Designed By: Berrybak Sdn Bhd for WONDOM Audio Technology & Sure Electronics Co., Ltd.		3RD ANGLE PROJECTION	DRAWING NO.	
1.00	26SEP2023			mm	FINISHING	
UMGAB8-07				9		

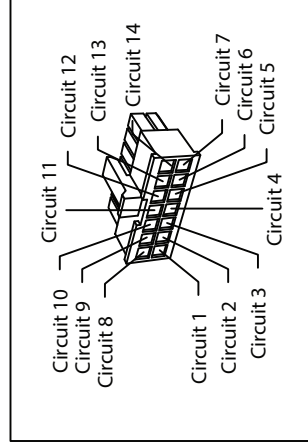
**A-1 MOLEX MicroFit Receptacle Housing  
Dual Row 7 Circuit**



**A-2 16 AWG Wire (1.5mm<sup>2</sup>)**

Note: Prior to installation, refer to the amplifier's silkscreen and labeling for circuitry and connection guidance. Failure to do so may result in improper functionality.

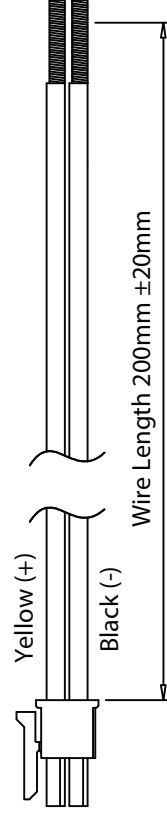
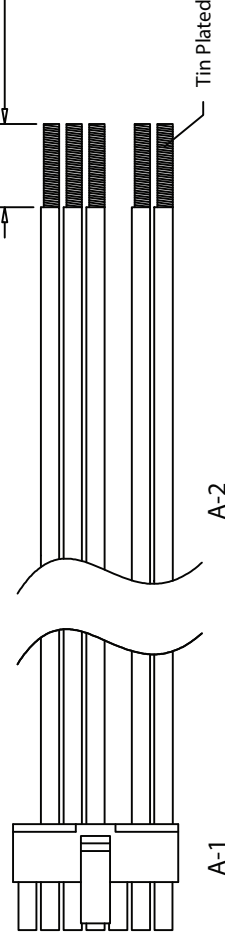
Note: Please be aware that 2x of this cables will be provided for your convenience during installation.



Size : 38.4 (w) x 13.4 (d) x 14.5 (h) mm  
 Strip length: 1.1mm / 0.43inches  
 Wire Gauge: 0.2-4 mm<sup>2</sup> (12-24 AWG)  
 Actuation type: Lever  
 GAB8 is recommended to be used in conjunction with the Push In Connector for optimal performance and compatibility.

**Stripping Length**

11.0mm ±1mm



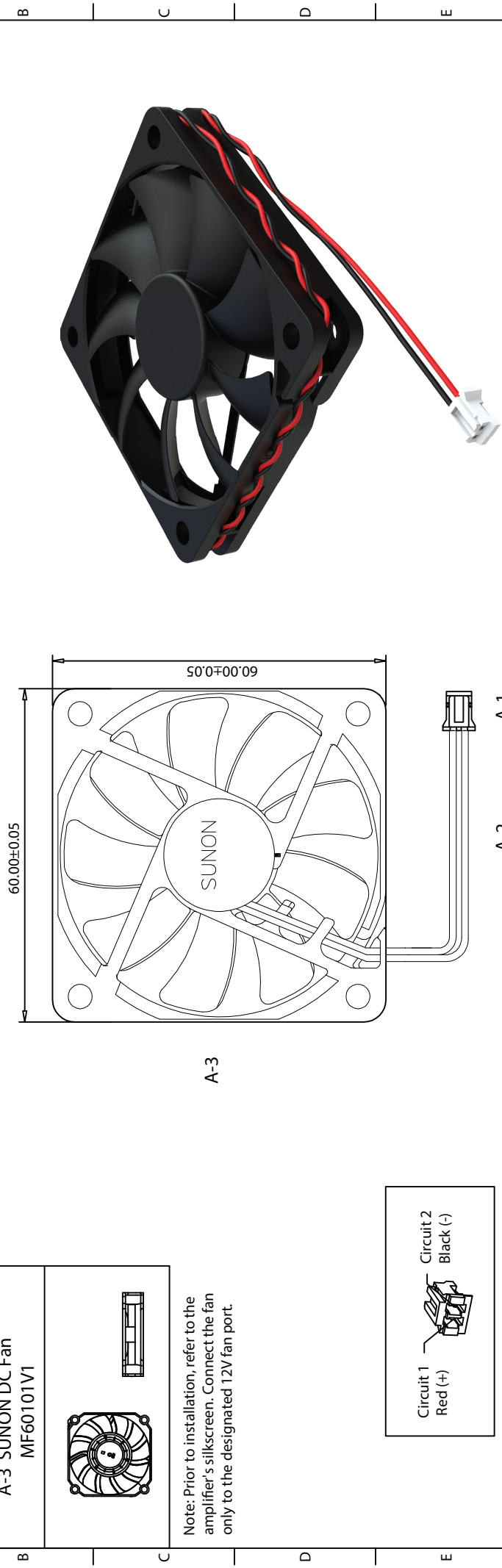
Note: 3D view(s) are not to scale.

Tolerance	DRAWN BY S SYUHAIL	VERIFIED BY N ZULNAZME	COUNTERSIGNED BY Z. CHENG	SCALE 1:1	MATERIAL(S) -	TITLE Wire Kit - Audio Output for GAB8
REVISION 1.00	ISSUED 26SEP2023	Designed By: Berrybak Sdn Bhd for WONDOM Audio Technology & Sure Electronics Co., Ltd.			3RD ANGLE PROJECTION	DRAWING NO.
UMGAB8-08						

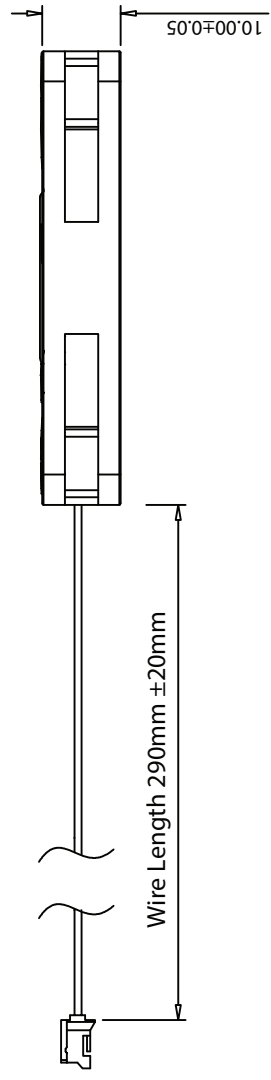


A	A-1 JST PH 2 CKT	A-2 26 AWG Wire	A-3 SUNON DC Fan MF60101V1	SUNON DC Fan MF60101V1	Rated Voltage (VDC)	Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Airflow (CFM)	Noise (dB(A))	Weight (g)
					12	108	1.30	4000	16.3	28.5	23.0

Note: For more details regarding the fan's specifications and dimensions, it is highly recommended to refer to SUNON's official datasheet.



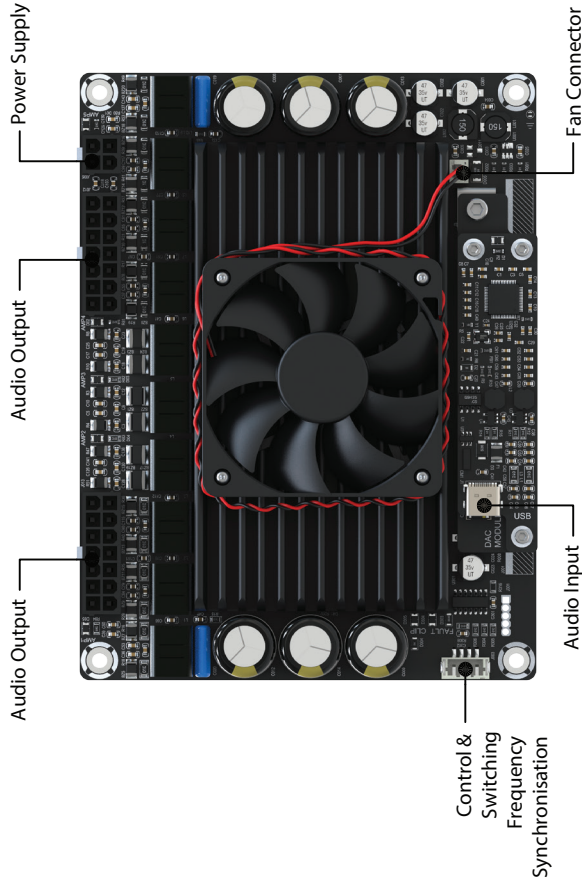
Note: Twisting the wire can enhance its overall durability by preventing kinks and ensuring a secure connection, reducing the likelihood of wear and tear for optimal wire cable management and durability during extended use. When purchased, the fan will already come pre-twisted.



Tolerance		DRAWN BY SYUHAIL	VERIFIED BY N ZULNAZME	COUNTERSIGNED BY Z. CHENG	SCALE 1:1	MATERIAL(S) --	TITLE Wire Kit - Fan for GAB8
REVISION 1.00	ISSUED 26SEP2023	Designed By: Berrybak Sdn Bhd for WONDOM Audio Technology & Sure Electronics Co., Ltd.		UNIT mm	3RD ANGLE PROJECTION	FINISHING --	DRAWING NO.
UMGAB8-09							

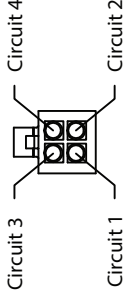
Note: 3D view(s) are not to scale.

# Connection Guide for GAB8



**Power Supply**  
J005 MiniFit Jr.-4.20mm-4Pos  
DC 15V-30V

Circuit	Definition
1	GND
2	GND
3	VIN
4	VIN



**Audio Output**  
J012 MiniFit Jr.-4.20mm-14Pos  
Output Speaker Configuration (7:3): FL+ FR + RL + RR + SSR + SSL + C.SUB x 3  
Front Left (FL), Front Right (FR), Rear Left (RL), Rear Right (RR), Side Surrounding Left (SSL), Side Surrounding Right (SSR), Center (C), Subwoofer (SUB) x 3.  
below are all its pin definition.

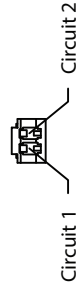
Circuit	1	2	3	4	5	6	7
Channel	OUT8-	OUT7-	NC	OUT4C-	OUT6-	OUT5A-	NC
Definition	SSR-	SSL-	NC	SUB3-	RR-	RL-	NC
Circuit	8	9	10	11	12	13	14
Channel	OUT8+	OUT7+	NC	OUT4C+	OUT6+	OUT5A+	NC
Definition	SSR+	SSL+	NC	SUB3+	RR+	RL+	NC

**Audio Output**  
J013 MiniFit Jr.-4.20mm-14Pos

Note: View is not in 1:1 scale

**Fan Connector**  
J011 PH-2.0mm-2Pos

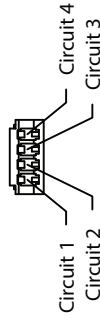
Circuit	Definition
1	+12V
2	GND



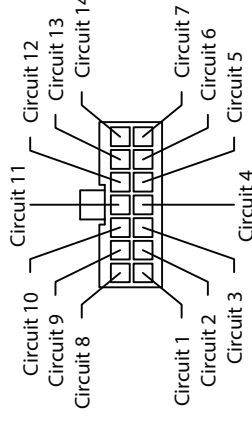
**Audio Input**  
J1 USB Type-C  
Used as audio input to 7.1 USB UAC 2.0 Codec internal circuit.

**Control & Switching Frequency Synchronisation**  
J003 PH-2.0mm-4Pos

Circuit	Definition
1	SHDN
2	MUTE
3	NC
4	GND



Circuit	1	2	3	4	5	6	7
Channel	OUT2-	OUT1-	NC	OUT4B-	OUT3-	OUT4A-	NC
Definition	FR-	FL-	NC	SUB2-	CEN0-	SUB1-	NC
Circuit	8	9	10	11	12	13	14
Channel	OUT2+	OUT1+	NC	OUT4B+	OUT3+	OUT4A+	NC
Definition	FR+	FL+	NC	SUB2+	CEN0+	SUB1+	NC



Note: 3D view(s) are not to scale.

Tolerance	DRAWN BY	VERIFIED BY	COUNTERSIGNED BY	SCALE	MATERIAL(S)	Connection Guide for GAB8	
						TITLE	DRAWING NO.
XY ± 0.1mm	S SYUHAIL	N ZULNAZME	Z. CHENG	1:1	---	---	---
Z ± 0.2mm				UNIT	FINISHING		
REVISION	ISSUED	3RD ANGLE PROJECTION					
1.00	4OCT2023	Designed By: Berrybak Sdn.Bhd for WONDOM Audio Technology & Sure Electronics Co., Ltd.					
UMGAB8-10							

# Circuit Configuration & Definition for GAB8

Control & Switching Frequency Synchronisation  
 J003 PH-2.0mm-4Pos

Audio Output  
 J012 MiniFit Jr.-4.20mm-14Pos

Circuit	Definition	Description	Functional Description
1	SHDN	Control the GAB8's shutdown mode.	Consumes minimal power or enters a low-power state. When SHDN is connected or shorted to GND (ground), it activates the shutdown mode. This is useful for conserving power or turning off the device when it's not in use.
2	MUTE	Control GAB8's mute mode.	Operates on an active low basis. Shorting MUTE to GND activates the mute mode, which silences or attenuates the audio output. This is often used to temporarily silence the device while keeping it powered on.
3	SYNC	Switching frequency synchronization with another board.	Allows to synchronize its switching frequency with the external source. This feature enhances versatility in system setups, ensuring that multiple devices or components in a system operate in sync with each other.
4	GND	Ground	-

Control & Switching Frequency Synchronisation connector controlling and enhancing the functionality of your GAB8 device. SHDN and MUTE circuits control power and audio output states, while SYNC offers synchronization capabilities for system setups, all while GND serves as a stable reference point for electrical connections.

Fan Connector  
 J011 PH-2.0mm-2Pos

Circuit	Definition	Description	Functional Description
1	+12V	Provides a +12V DC voltage supply to power the connected fan or cooling device.	When you connect a compatible fan to this circuit, it receives a constant +12V power supply, which is necessary for the fan to operate. This voltage powers the fan's motor and allows it to spin at the desired speed to cool down the components in your GAB8 device.
2	GND	Ground	-

Fan connector on GAB8 device has two circuits: one supplies +12V voltage to power the fan, while the other provides the necessary ground connection. This connector enable the fan to operate efficiently and cool down the components within your device, helping maintain optimal operating temperatures.

Power Supply  
 J005 MiniFit Jr.-4.20mm-4Pos  
 DC 15V-30V

Circuit	Definition	Description	Functional Description
1	GND	Ground	-
2	GND	Ground	-
3	VIN	Power input to GAB8. Support a voltage range of DC 15V to 30V.	Connect external DC power supply within the voltage range (15V to 30V). GAB8 should use this specified range voltage to power its internal components and perform its intended functions.
4			

Power supply connector on GAB8 device has two GND circuits for grounding and two VIN circuits for accepting a wide range of input voltages (DC 15V to 30V). Properly connecting a compatible power source within this voltage range to the VIN circuits, while ensuring the GND connections are securely grounded.

Circuit	1	2	3	4	5	6	7
Definition	SSR-	SSL-	NC	SUB3-	RR-	RL-	NC
Description	Side Surround Right (Negative)	Side Surround Left (Negative)	No Connection	Subwoofer 3 (Negative)	Rear Right (Negative)	Rear Left (Negative)	No Connection
Functional Description	Reproduces audio from the right side of the listening area.	Reproduces audio from the left side of the listening area.	-	Provides the return path for subwoofer audio signals.	Provides the return path for rear right audio channel signals.	Provides the return path for rear left audio channel signals.	-
Circuit	8	9	10	11	12	13	14
Definition	SSR+	SSL+	NC	SUB3+	RR+	RL+	NC
Description	Side Surround Right (Positive)	Side Surround Left (Positive)	No Connection	Subwoofer 3 (Positive)	Rear Right (Positive)	Rear Left (Positive)	No Connection
Functional Description	Complements SSR- by carrying the positive audio signal.	Complements SSL- by carrying the positive audio signal.	-	Complements SUB3- by carrying the positive subwoofer audio signal.	Complements RR- by carrying the positive rear right audio channel signal.	Complements RL- by carrying the positive rear left audio channel signal.	-

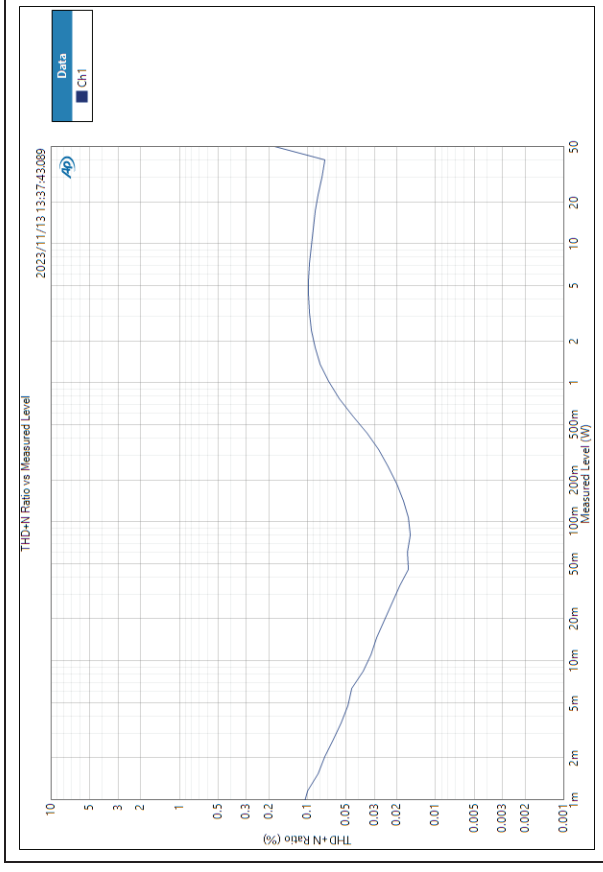
Audio Output  
 J013 MiniFit Jr.-4.20mm-14Pos

Circuit	1	2	3	4	5	6	7
Definition	FR-	FL-	NC	SUB2-	CEN0-	SUB1-	NC
Description	Front Right (Negative)	Front Left (Negative)	No Connection	Subwoofer 2 (Negative)	Center (Negative)	Subwoofer 1 (Negative)	No Connection
Functional Description	Reproduces audio from the front right audio channel.	Reproduces audio from the front left audio channel.	-	Provides the return path for subwoofer 2 audio signals.	Provides the return path for the center audio channel signals.	Provides the return path for subwoofer 1 audio signals.	-
Circuit	8	9	10	11	12	13	14
Definition	FR+	FL+	NC	SUB2+	CEN0+	SUB1+	NC
Description	Front Right (Positive)	Front Left (Positive)	No Connection	Subwoofer 2 (Positive)	Center (Positive)	Subwoofer 1 (Positive)	No Connection
Functional Description	Complements FR- by carrying the positive front right audio signal.	Complements FL- by carrying the positive front left audio signal.	-	Complements SUB2- by carrying the positive subwoofer 2 audio signal.	Complements CEN0- by carrying the positive center audio signal.	Complements SUB1- by carrying the positive subwoofer 1 audio signal.	-

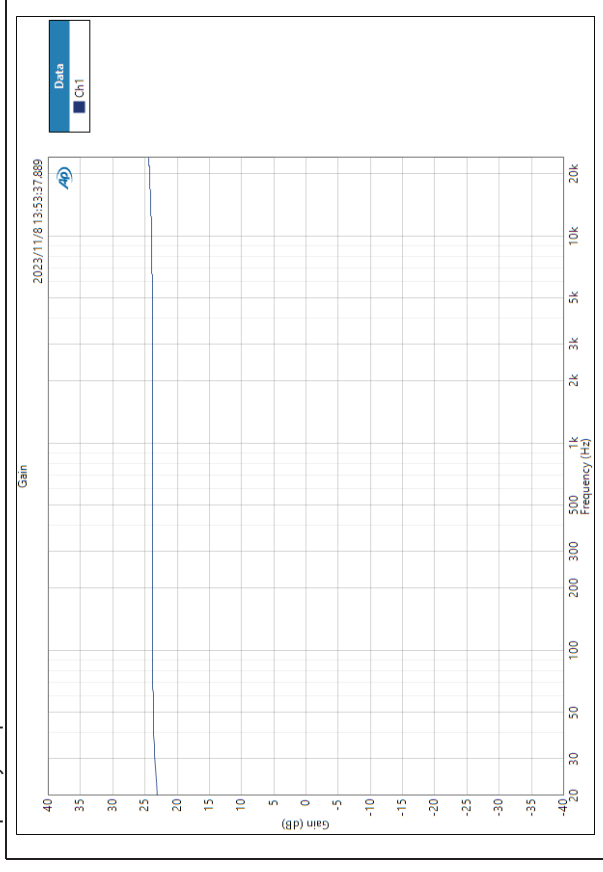
Note: 3D view(s) are not to scale.

Tolerance		DRAWN BY	VERIFIED BY	COUNTERSIGNED BY	SCALE	1:1	MATERIAL(S)	Circuit Definition for GAB8	
XY	± 0.1mm	S SYUHAIL	N ZULNAZME	Z. CHENG	UNIT	mm		TITLE	
Z	± 0.2mm						FINISHING		
REVISION	1.00	ISSUED	Designed by: Berrybak Sdn.Bhd for WONDOM Audio Technology & Sure Electronics Co., Ltd.		3RD ANGLE PROJECTION			DRAWING NO.	
		UMGAB8-11							

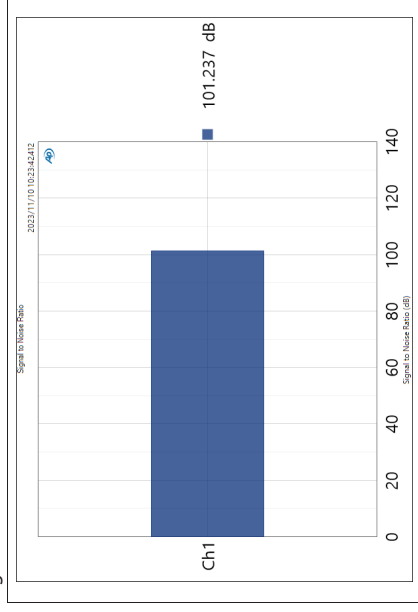
THD+N Ratio vs. Measured Level



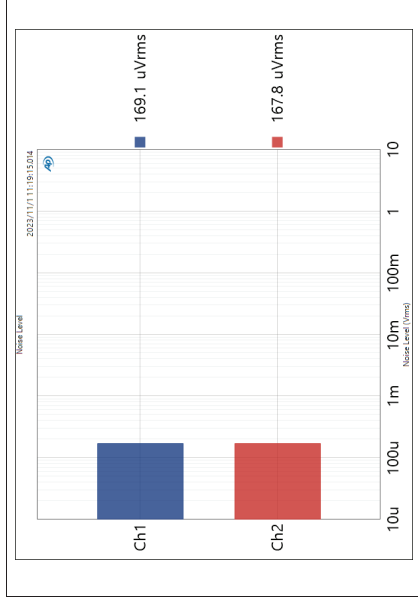
Frequency Response



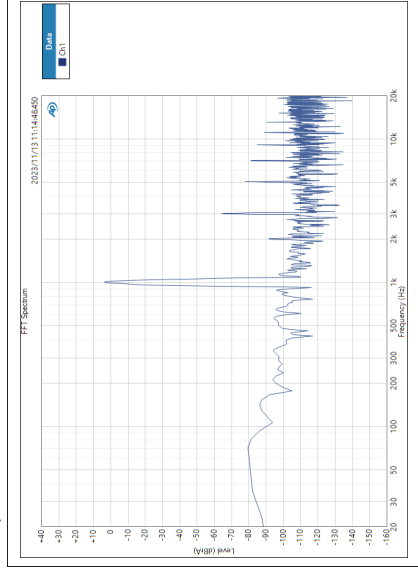
Signal to Noise Ratio



Noise Level



FFT Spectrum



Note: 3D view(s) are not to scale.

Tolerance	DRAWN BY	VERIFIED BY	COUNTERSIGNED BY	SCALE	MATERIAL(S)	TITLE	
	XY ± 0.1mm	S. SYUHAIL	N. ZULNAZME	1:1			---
REVISION	Z ± 0.2mm	Designed By: Berni Pak Sdn Bhd for WONDOM Audio Technology & Sure Electronics Co, Ltd.	Z. CHENG	UNIT	FINISHING	DRAWING NO.	
	1.00		6OCT2023	mm			3RD ANGLE PROJECTION
UMGAB8-12							