



Dynamic Audio Solutions

BrainCore™

Technology Inside

SA3 SERIES

User's Manual

Multi-functional Compact Active Speaker



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◆ Product Introduction

Thank you for purchasing SA3 series full range active speaker system and active subwoofer from Audiocenter. They have integrated technologies of switch mode power supply, big power digital amplifier and DSP control, as well as speakers made of new materials. It is the result of years of R&D effort. We hope that you can use with pleasure, just as how we designed it.

Please finish reading the manual before usage, to make sure the best performance of SA3. Please keep the manual for future reference.

◆ Safety precautions

When you set up, install and use the SA3, please follow the following safety measures strictly:

- There can be danger in any step during hanging installation. Everyone should pay attention to personal safety. All purchasers of Audiocenter should be professional people qualified to conduct the work related to such equipments.
- We strongly suggest the users pay full attention to local rules, regulations and laws. Installers have the responsibility to make sure the speaker installations are subject to local rules, regulations, and laws.
- If any danger or defect is detected, measures should be taken immediately to correct it.
- In touring application, please choose the installation hardware and occasion that can sustain the weight of the equipments.
- Please do not try to hang speakers over the design standard.
- When connecting the cables of the products, please use cable tie to fix the cables, to avoid actors, workers, and audience falling on the wire or brackets and affecting the speaker system.
- Please do not place the speakers near equipments sensitive to magnet fields, such as CRT display, TV or data saving materials.
- Please do not place the power cable near heating source. Do not over bend or damage the power cables. Do not place heavy things on it. Please do not place the cables that may be pressed or cause stumbling.
- Only the specified rated voltage should be used for this product. Please refer to the back panel of the product for the specified voltage.
- Only the supplied power cable or plug should be used. (If you need to use the product in a place different from the purchase place, please consult your local Audiocenter distributor.).
- Please check the power cable or plug regularly.
- Please make sure to connect to proper power socket with protection grounding connection. Wrong grounding may cause short circuits.
- The product inside does not include any component that can be repaired by users. In case of abnormal operation, please stop using immediately, and contact qualified Audiocenter maintenance worker to repair.
- Please do not use the product in the rain, or near water, or in humid environment, to avoid liquid spilling to any opening.
- When any of the following situations occurs, please cut the power immediately, and pull out the power plug from the socket, and ask qualified Audiocenter maintenance worker to repair.
 - Wear or damage of the power cable or plug.
 - Abnormal smell or smoking.
 - Some substance falls into the product.
 - Sound stops suddenly when using the product.
- If the product falls or damages, please turn off the power switch immediately. Pull out the power plug from the socket, and ask qualified Audiocenter maintenance worker to repair.
- When pulling out the power plug from the power socket or the product, please make sure to grab the plug instead of the power cable. Pulling the power cable directly may cause damage.
- If the product is not used for long time, or there is thunder storm, please pull out the the plug from the socket.
- Please do not place the product in any uneven position. Otherwise, it may cause falling off suddenly.

- If the product is not fixed safely, please do not place it in a position that may cause easy falling.
- Please do not block the air hole. The product has air hole at the back to avoid internal temperature too high. Bad ventilation may cause damage to the product or even fire.
- Please do not hang or install any other component to the handle of the speaker. It may cause damage or injure.
- Please do not press the back panel of the product to the wall. Otherwise, the plug may touch the wall and separate from the cable, and cause short circuits, malfunction, or even fire.
- Before connecting the product to other equipment, please turn off the power switch of all equipments. Before turning on or off the power switch of all equipments, please turn down the volume to the minimum.
- Please do not use the product in a very high or uncomfortable volume. Otherwise, it may cause permanent damage to your ear.
- In case of sound distortion, please do not use the product. To continue using the product in such status may cause fire.
- Using mobile phones near the speaker may cause noise. In case of noise, please use the mobile phone far from the speaker.
- If you need service, please contact Audiocenter service center, agent, or distributor in your area.

⚠ In order to avoid to cause you or others body injury and loss on equipment or property, please make sure to follow above basic items.

Package accessories:

- Power cable
- User's manual
- Quality certificate
- Introduction for similar product

Please check above items carefully. If any questions, please advise Audiocenter representative, dealers, distributors, or contact by email box: support@ac-pro.net.

Optional accessories:

- Flightcase
- Cover bag
- Stand
- Coupling bar
- Handbag
- Wheel scooter(SA3218)

◆ SA3 Technical Features

SA310



SA312



SA315



SA3118

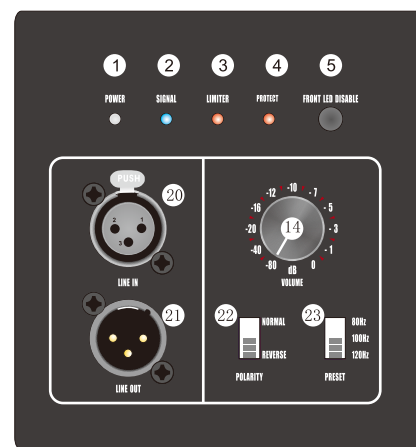
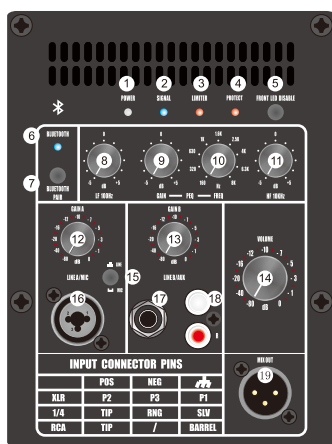


SA3218

● Features:

1. Integrated with high-powered input, Switch mode power supply and DSP digital control technology.
2. With built-in DSP audio specialization technology, all functions such as EQ, phase correction, delay and limiter are intuitively designed for ease of usage.
3. Class D power amplifiers are utilized for high efficiency, light weight and compact circuit structure.
4. Strong protection are implemented with built-in DSP processing circuit to ensure system integrity to the HF&LF components separately.
5. Advanced AD/DA converter, 96 KHZ sampling frequency and 24 bit precision along with optimized DSP algorithm to ensure the crisp and clean sound output.
6. SA3 speakers can link audio equipment via bluetooth to play music, the blue tooth functionality can be applied to connect two speakers at the same time.

◆ SA3 back panel control and function



- 1 **Power Indicator**
When speaker connected to power, the LED is on.
- 2 **SIGNAL Indicator**
When input signal is detected, the LED will turn on.
- 3 **LIMITER Indicator**
The LED will turn on when output limiter is activated. If the output of amplifier exceeds the maximum value, the output limiter will be activated become active, thus damping the output signal.
- 4 **PROTECT STANDBY Indicator**
If detecting any abnormal phenomena is detected within protection the active module, the LED in dicator will turn on. This sends the amplifier to enter protection status.
- 5 **Front LED ON/OFF switch**
The front panel LED light won't illuminate when the pressing the switch. (This setting is recomme-nded when the LED is to blinding)Pop-up switch, the front panel LED light will be on. (working state: blue light;Standby: red light).
- 6 **BLUETOOTH indicator light**
When the light is off, no connection between speaker and bluetooth devices(such as mobile phone);
When the light is on, means connecting that indicates successfully the connection between speak-ers and bluetooth devices are established(such as mobile phones, tablets...);
When the lights shine flash at reoccurrence rate of 1 time per SEC, speaker bluetooth is in pairing mode, and can be match the connection with Bluetooth enabled devices;
The lights flashing flash at reoccurrence rate of 3 times per SEC, speaker Bluetooth is in"box"mode (two speakers need to enter this mode to match when pairing for the first time).

Note: "the box" means one blue tooth devices (such as mobile phones) can connect two SA3 speakers at the same time to play music.

7 BLUETOOTH PAIR the BLUETOOTH pairing key

If you want to connect the BLUETOOTH to play music for audio input, press and hold the "BLUETOOTH PAIR" 3 seconds (BLUETOOTH indicator light flashing 1 SEC 1 time), then select "audiocenter SA3" in the Bluetooth enabled devices to pair.

If you want to play "the box" mode, the first is to pair between two speakers, press and hold the "BLUETOOTH PAR" for 5 seconds when pairing for the first time (BLUETOOTH indicator light flashing 3 times 1 SEC), then the two speakers will pair automatically.

8 LF 100 Hz bass control regulation

This is a Low Shelf Filter with 100 Hz cut off frequency, adjusting knob to cut or improve Low frequency when signal frequency is lower than the cut off frequency.

9 PEQ period parameters equalizer

This is a Peaking Filter, it is applied to use GAIN knob and FREQ knob together.

10 FREQ: center frequency 160Hz, 320Hz, 630Hz, 1KHz, 1.6KHz, 2.5KHz, 4KHz, 6.3KHz, 8KHz.

GAIN: cut or ascend the signal of selected center frequency.

11 HF 10 KHZ high control

This is a Hi Shelf Filter with 10 KHZ cut off frequency, adjusting knob to cut or improve High frequency when signal frequency is higher than the cutoff frequency.

12 GAIN A GAIN control knob

Use GAIN A knob to control Gain of input signal on LINE A/MIC. This control can adjust the sensitivity and thus to control the amount of semaphore send to the amplifier and then to the speakers.

13 GAIN B GAIN control knob

Use GAIN B knob to control Gain of input signal on LINE B/AUX. This control can adjust the sensitivity and thus to control the amount of semaphore send to the amplifier and then to the speakers.

14 VOLUME control knob

VOLUME knob controls the gain input signal of all the channels. This control can adjust the sensitivity, so as to control the amount of semaphore send to the power amplifier and then to the speakers.

15 LINE/MIC switch

Choosing the LINE/MIC according to the input signal level. For low level signal (such as a microphone), please switch to MIC position (press); For high level signal, such as electronic acoustic musical instruments and audio equipment, please switch to the LINE position (not press the button).

16 INPUTS socket (LINE A/MIC)

Balance the XLR and PHONE type multi-purpose input pin (LINE A/MIC).

17 INPUTS socket (LINE B)

Balance 1/4" Phone plug-in input pin. (LINE B).

18 INPUTS socket (AUX)

Non-equilibrium RCA input pin. (AUX).

19 OUTPUTS pins (MIX OUT)

Balance XLR output pin. Equilibrium output mixing signal (Mixed the signal of all channels as a whole).

20 INPUTS socket (LINE IN)

Balanced XLR input socket. (LINE IN)

21 OUTPUTS Socket (LINE OUT)

Equilibrium XLR output socket, because it is paralleled to the INPUTS interface (LINE IN), the input signal can bypass without being affected. (LINE OUT).

22 The polarity of SA3 series:

Polarity, also is called as phase, means that the input voltage is positive or negative in specific time. In most case, the positive will drive the diaphragm of the speaker to move forward, and the negative will pull it backward. When a specific frequency signal or similar signal repeats, the polarity must be the same, so that the input efficiency will be the highest, which is very important for subwoofer system. Wrong connection or usage will change the polarity, and lower the system's efficiency.

SA3218 series polarity can be changed according to different using conditions.

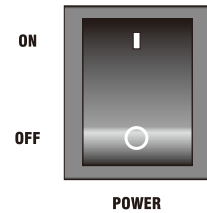
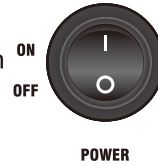
When full range speakers system and subwoofer speaker system are for combines application, please change the phase according to their distance to get the best sound performance.

23 Preset three low pass filter

The low-pass filter cut off frequency specified in 120 Hz and 100 Hz and 80 Hz. The filter will cut frequency higher than the cut off frequency.

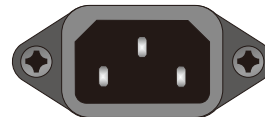
24 Power switch

Turn the power ON or OFF, pull the switch up to position (1) to turn ON the power, and pull the switch down to the position (0) to turn OFF the power.



25 AC input slot

Connect the cable to the slot. Connect the power wire to the device first and then connect the cable to the AC slot.



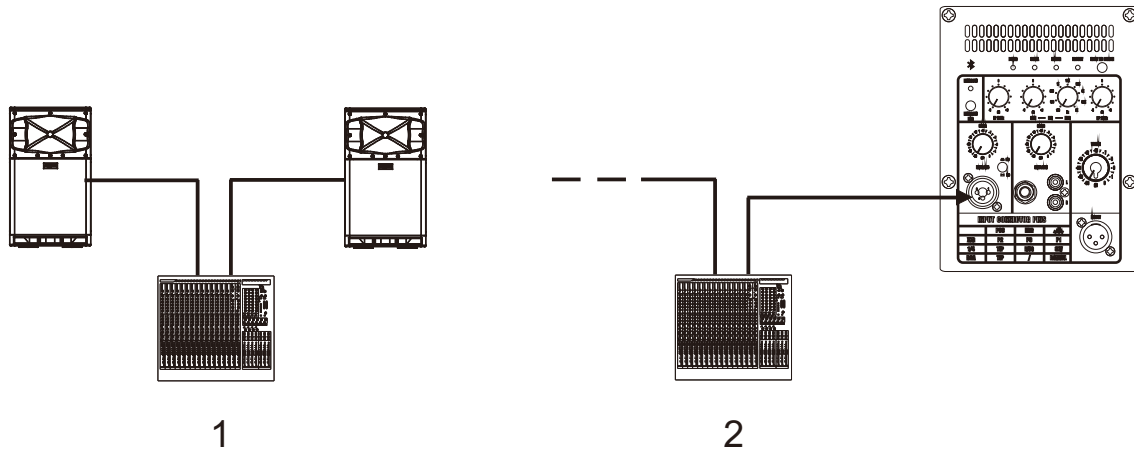
AC INPUT
100-130V/60Hz
220-240V/50-60Hz
100-240V/50-60Hz

⚠ NOTE: The SA3 employs a universal power supply, capable of operating the system with input AC power voltages ranging from 100V~130V(60Hz)/ 220V~240V(50/60Hz)/100V~240V(50/60Hz). Use only the power cable that is correct for your location.

◆ Product Application Sample of SA3 series

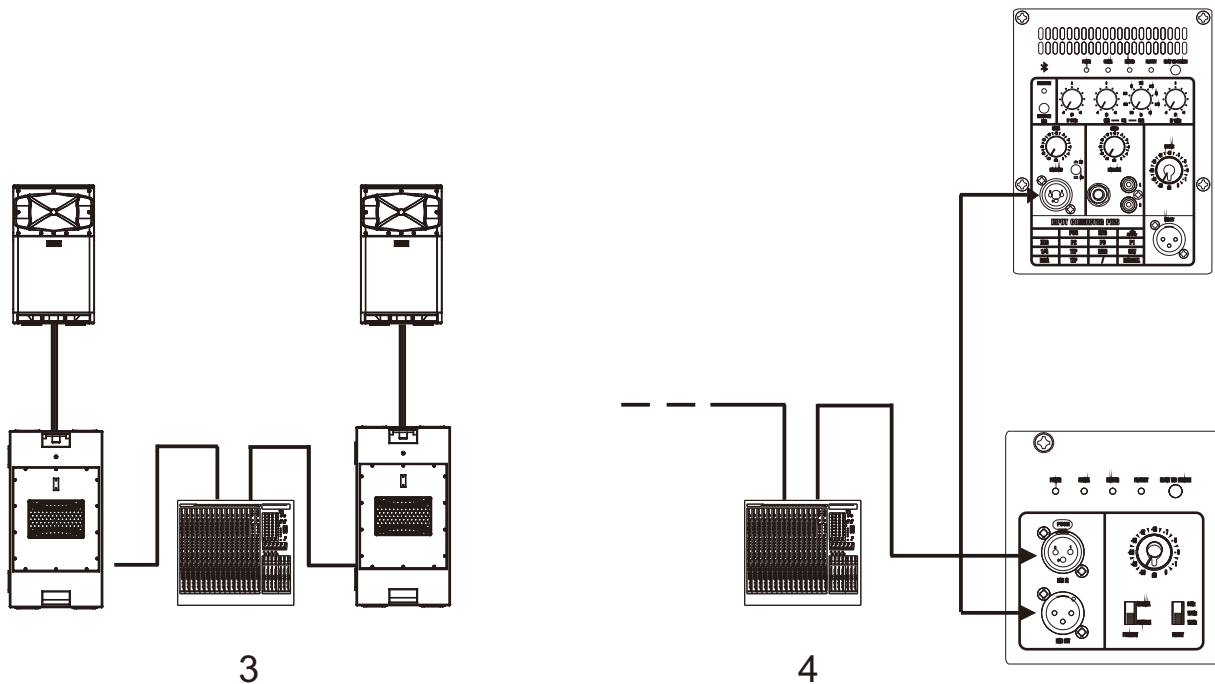
1. Basic system application

Below is the basic system application with 2 pcs of SA3 series full range speakers. This system is ideal for small size touring performance, restaurant and rehearsal etc.



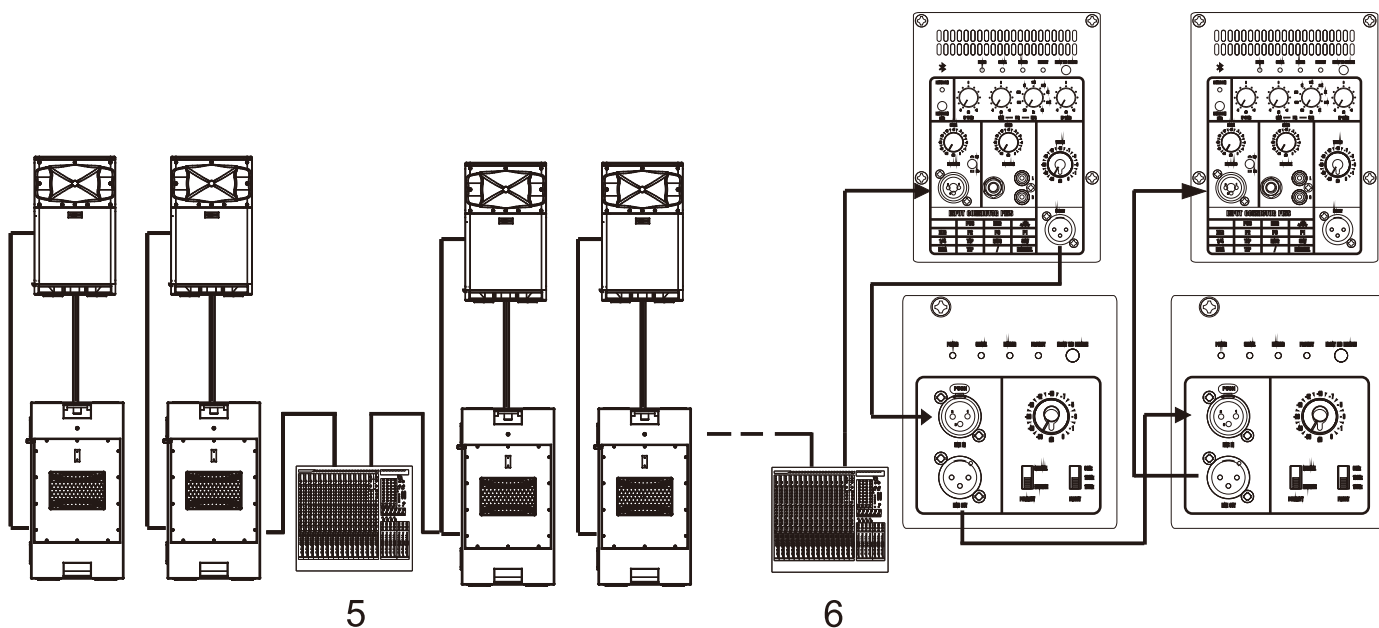
2. Basic system with subwoofer

Below is the basic system with 2 pcs of SA3 series full range speakers and 2 pcs of subwoofers with coupling bars. This system is ideal for small size touring performance, church and small stadium, etc.



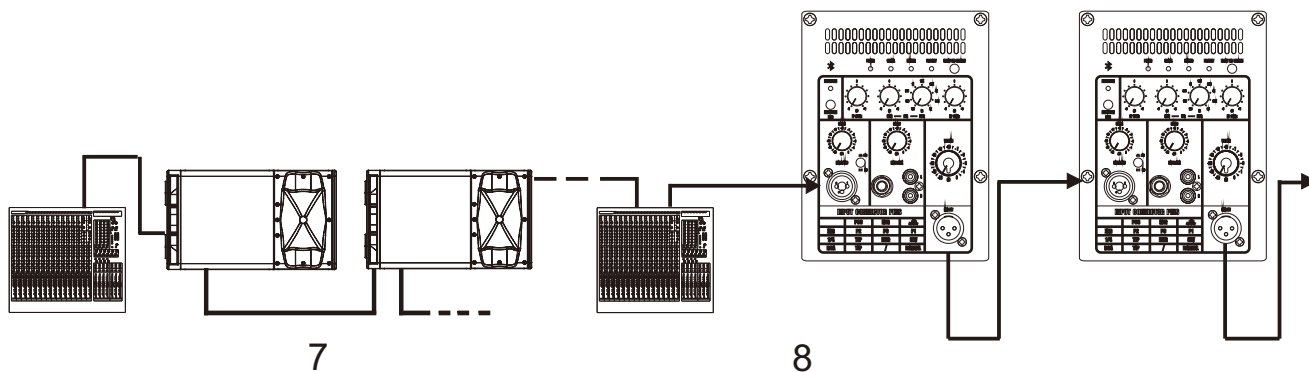
3. System for medium scale application:

Below is the system for medium scale application with 4 pcs of SA3 series full range speakers and 4 pcs of subwoofers, This system is ideal for medium size touring performance, church, etc.



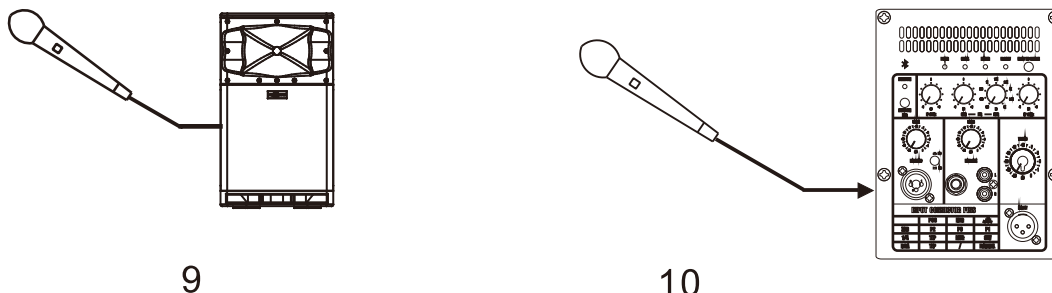
4. Monitor System:

The following pictures introduce the use of SA312 or SA315 speakers for stage monitoring.

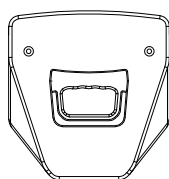
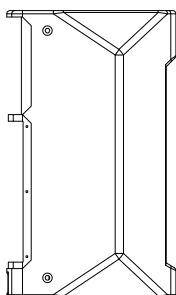
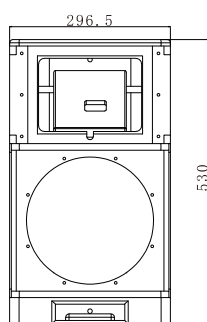


5. System with Microphone:

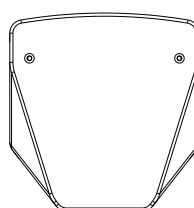
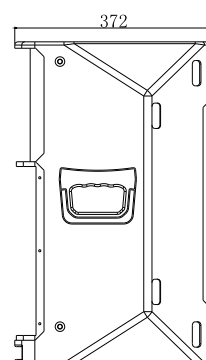
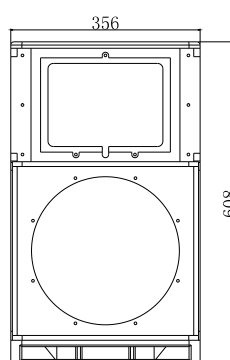
Below is the application of SA3 Series speakers with one microphone. This system is ideal for seminar, product launch, etc.



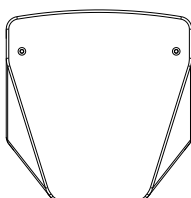
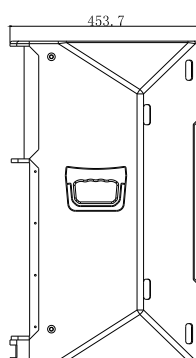
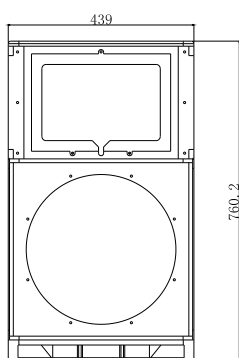
◆ Dimension of SA3 series



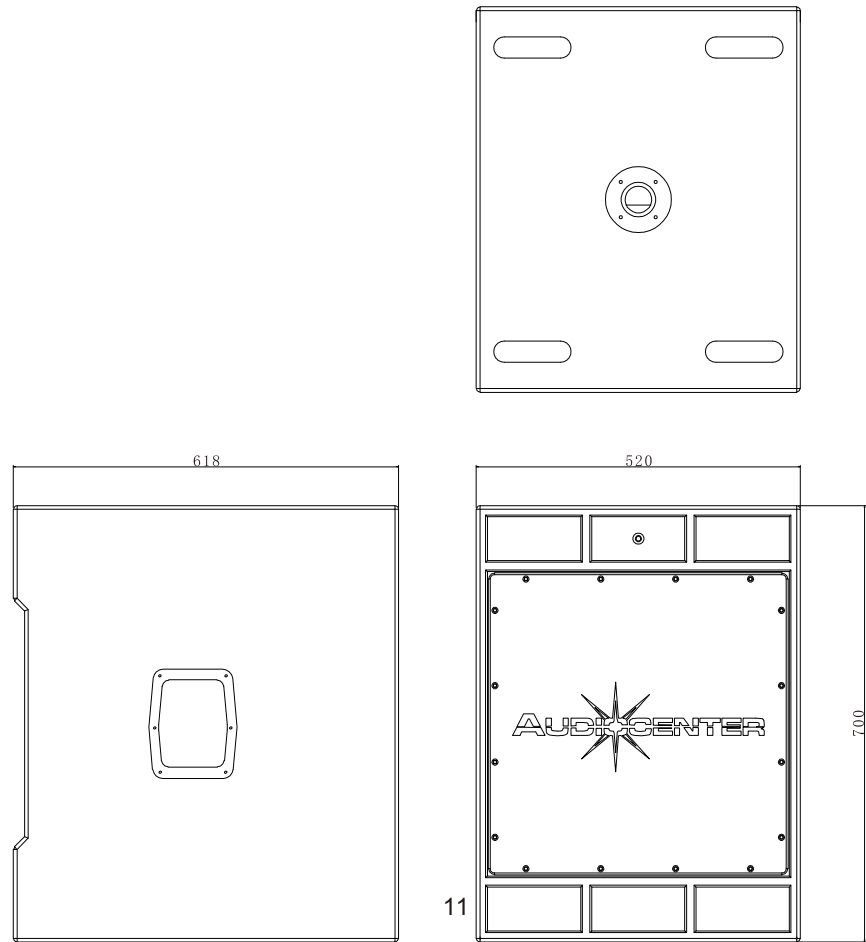
SA310



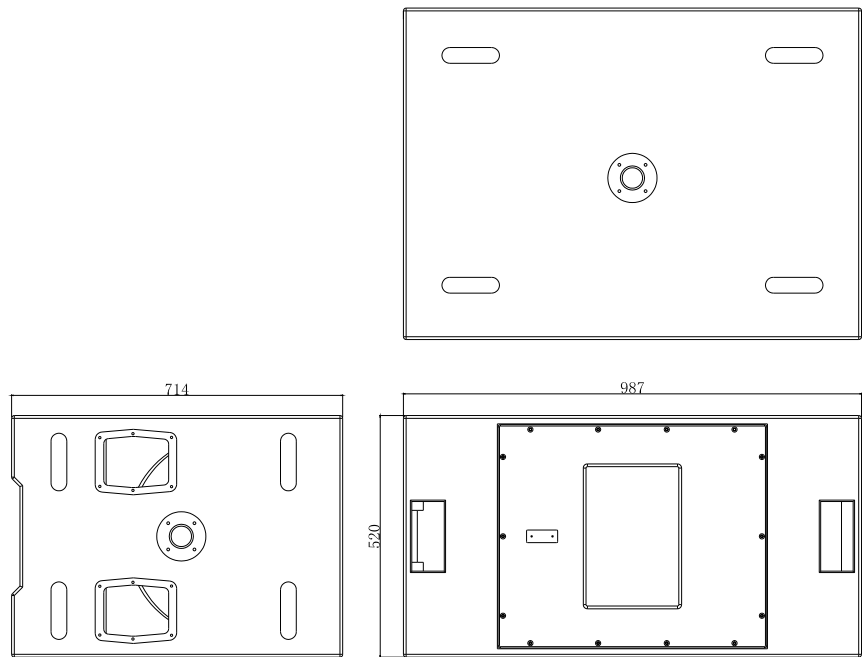
SA312



SA315



SA3118



SA3218

◆ SA3 Series Specifications

SPECIFICATIONS		SA310	SA312	SA315	SA3118	SA3218
Frequency Response (-6dB anechoic chamber)		57Hz-20KHz	48Hz-20KHz	44Hz-20KHz	35Hz-150Hz	
Directivity -6dB(H°×V°)		90° × 60°	60° × 40°		/	
Maximum Calculated SPL/1M	Continuous	124dB	126dB	128dB	128dB	134dB
	Program	127dB	129dB	131dB	131dB	137dB
	Peak	130dB	132dB	134dB	134dB	140dB
Drivers	HF	Customized Audiocenter ferrite driver,1.75" voice coil,1" exit			/	
	LF	Customized Audiocenter ferrite driver, 2" voice coil	Customized Audiocenterferrite driver, 3" voice coil		Customized Audiocenter ferrite driver, 4" voice coil	
Crossover and Slope		Controlled by DSP				
Signal Input/Output Connector		1×NEUTRIK® female XLR (Mono jack 6.35), 1×Mono jack 6.35, 1×RCA, 1×wireless bluetooth			Female XLR input, Male XLR output	
Power Input/Output Connector		3 pin plug				
Working Voltage		100V-240V/50Hz/60Hz			100V-130V/60Hz or 220V-240V/50Hz	

DSP

Processor	96KHz signal sampling frequency, 24bit precision				
Presets	Adjustable via the knobs on the back panel			80Hz, 100Hz, 120Hz	

AMPLIFIER

Amplifier		Class D			
Power(Peak)		2000W			4000W
Frequency Response (1W 8Ω 2ch)		20Hz-20KHz(±0.5dB)			20Hz-6KHz(±0.5dB)
Intermodulation Distortion (20Hz-20KHz, half power)		<0.05%			
Total Harmonic Distortion(20Hz-20KHz, Rated power 8Ω)		<0.05%			
Cooling		Cooling with fans ,air convection			
Protection	DC protection	√			
	Short circuit protection	√			
	Overheat protection	√			
	Output overload protection	√			
	Soft startup protection	√			
	Overvoltage protection	√			
	Undervoltage protection	√			

CABINET

Cabinet	CNC made of excellent wood				
Cabinet Color	Black is standard and default color. Consult with Audiocenter sales team for other customized colors				
Optional Accessories	Flexible wall mounting bracket / Coupling bar / Flightcase / Durable rain bag / Handbag			Flightcase / Wheel / Coupling bar / Durable rain bag	
Dimensions(W×H×D)	296×530×312mm	356×608×372mm	439×760×454mm	520×700×618mm	988×520×714mm
Net Weight	14.5Kg	20.0Kg	27.0Kg	43.0Kg	70.0Kg
Technical Support and After-sales Service	Global application support team				

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AC - SA3 - 202203

◆ Trouble Shooting

Symptom	Possible reasons	Solution
Power LED not light	Cable not connected correctly	Connect the cable correctly
No sound	Cable not connected correctly. Or too small gain.	Connect with input socket correctly. Adjust speaker output gain input bigger.
Feedback in the sound	Microphone is toward to speaker Sound is too high. Wrong preset used.	Speaker should be far away from the microphone sound-pickup area to reduce the output gain, making the microphone closer to the sound source
Sound Discrepancy from different speakers .	Different gain for different speakers Different presets for different speakers Subwoofers are out phase	Put the same gain for different speakers. Use the same presets for different speakers. Make the subs in phase
Sound distortion	Input volume is too big Output volume too big	Reduce the input volume of the equipments Reduce the output gain of the speakers, make the Limiter LED lighted a bit If the sound still distorted while the volume is set to minimum, make the MIC/LINE switch to be LINE.
Microphone volume is too small	MIC/LINE switch is set at LINE	Set the MIC/LINE at MIC
Not enough SPL while full range speakers used together with subs	Subs might be out of phase	Adjust the phase of subs
The light signal is on, there is a signal output, but the speaker does not sound	Maybe the volume knob is set to the minimum, Closing the volume	Slightly increase the volume knob
Can't search to the speaker bluetooth	Speaker Bluetooth not in pairing mode	Press "BLUETOOTH PAIR" 3 seconds, into pairing mode, the Bluetooth light will be on in the pairing mode.

★ Please consult distributor if there are still problems



Dynamic Audio Solutions