



OWNER'S MANUAL



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AK Series

AK2-500 AK2-700 AK2-1000 AK2-1200 AK2-1500
AK3-1200 AK3-1500 AK4-300 AK4-700 AK4-1300



Note

A series of horizontal dashed lines for taking notes.

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WARRANTY CARD

The various series power amplifiers of our company are good products, each amplifier's delivery all will be through the stringent quality checks. Our company assures you that the products are in the good performance and devices are complete, and provide you free warranty service according to the this regulation.

- Meanwhile, when our company provides you warranty service, you must present the warranty card and the invoice as the proof condition. And we recommend that you consult with our service department before sending back the products to ensure the smooth service. Customer Service Hotline: 0086 -0757-83603299

Within three-year warranty period since the date you purchase, if the product damages or has failure (except for not within the warranty range and the individual reasons mentioned below), and be confirmed by our technical department that the errors are not caused by non-operating, our company will provide free maintenance and replacement parts.

- In the following cases, our company will not give any maintenance and help:
 1. It is not the product which our company is as a agent.
 2. Fake (smuggled) goods;
 3. The product which has no body code, or the code has been altered, destroyed, converted and not in our company's sales records.
- In the following cases, the warranty card will automatically expire:
 1. The product has been burned because of the overload or the feedback and other reasons due to the mishandling;
 2. The product damage due to shipping failures;
 3. Due to the poor work environment (such as damp environment) which makes the products can not meet the requirements that cause damage;
 4. Due to the force majeure causes damage, such as natural disasters;
 5. The product has been repaired or modified by technician who is not our company's staff;
 6. The product has not been installed properly according to the operation guidance which causes damage.
- The warranty and service which is provided by our company is only limited to conduct in our service center and the product is sent back to repair by the customer. For the requirements of going out for warranty or maintenance, all the trip expenses are paid by you.
- Our company is not responsible for any losses which are caused by the damage of the product directly or indirectly.
- The product which exceeds the warranty period, our company will charge a reasonable service fee.
- Our company reserves the right to alter the terms without prior notice.



Introduciton

1. Welcome

Welcome to use AK series professional audio power amplifier with APP brand which own by KOBBLE. For your safety, please read the caution before installing and operating the power amplifier.

AK series professional power amplifier. Has a stable circuit and reasonable cooling layout and the carefully selected components, concise manufacturing process, long time burning test, to ensure that the amplifier has excellent performance and reliability

2. Product Checking

Open the box to check your new amplifier. If you find there is damage, please advise the logistic company timely, and you have the right to claim for logistic company for the losscaused during transport as you are the consignee.

3. Features :

<1> Adopt the E.I.A international standard (2U)3.5" (88mm) professional amplifier chassis.

<2> Power supply design:

Each unit contains a set of logical power supply. Adjust the power output level voltage through the logic power supply real-time dynamic control circuit. And can real-time dynamically adapt to the signal and load requirements, which can achieve the optimal power matching under the wide load conditions, and ensure the amplifier will not overheat.

<3> Professional Speakon socket suit for the engineering and touring performance.

<4> To withstand the long-term bumps along the way, all the spare parts are through the special reinforcement.

<5> Adopt the precision CNC lathes to stamp the integrated steel plate to make the structure extremely strong and be able to withstand the maximum transient

pressure without deformation

<6> Perfect protection function

Amplifier provides many different types of protection functions, including DC protection, internal fault protection, input overload protection, RF interference filter, output short circuit protection, un-match load and high-frequency overload protection, overheat protection of heat-sink and transformer and power supply input over-current protection (over-current protection switch)

<7> XLR balanced input and output

<8> Cooling systems

The cooling system is using the wind tunnel type, seal gas flow pass can strengthen the cooling effect and avoid the fault which cause by the PCBA pollution which caused by the stage dust y and smoke. Ensure when the unit is under the normal work conditions, the temperature can reach balance within a certain range.

<9> Perfect interface:

Signal input:XLR input/signal parallel output

Horn output: Speakon professional output socket.



4.Functions & Features :

- <1>Efficient heat-sink, variable speed cooling fan, ensures the amplifier working at the low temperature.
- <2>Exquisite shape and standard installation hole.
- <3>Perfect protection, including limit, the on / off shock protection, DC protection, output short circuit protection, overheat protection.
- <4>In-built limiter, it is a very effective protection against electrical damage to the speaker.
- <5>Excellent audio signal performance, which has excellent signal conversion feature, it has very little harmonic distortion (THD), intermodulation distortion (SMPTE-IM), transient intermodulation distortion, pure and natural interstitial deduction.
- <6>STEREO,BRIDGE, PARALLEL working mode.
- <7>Each channel has its Signal and Clip indicator.
- <8>When the protection circuits work, Fault indicator lights, and sound output automatically stop at the same time.
- <9>The front panel level gain control.
- <10>The newest MD component technology makes the product more stable and reliable
- <11>The transistors directly contact with the heat sink to make it cool quickly.
- <12>The optimization cooling system let the machine work stability,With automatic variable speed fan.
- <13>The unique short circuit locking and automatically reset function let the customers' visual performance more reliable.

5.Certification :

In order to prepare to provide the needed materials to the production, we use a complete ERP system which can comprehensively balance and optimize management the resources. In addition, we also bear the following certification.

- <1>EU "CE" compulsory certification mark
- <2>UL product safety test and certification
- <3>American product safety standard
- <4>PSE Japanese compulsory safety mark
- <5> KET Korean compulsory certification
- <6>RoHS Certificate
- <7>CCC National Compulsory Certification
- <8>ISO9001 quality system certification



Rated power /model	AK4-300	AK4-700	AK4-1300
1kHz(HIA)with0.5%THD			
8Ω stereo(per channel)	4x350W	4x670W	4x1220W
4Ω stereo(per channel)	4x550W	4x1030W	4x1670W
8Ω bridge mono	2x1000W	2x2300W	2x4000W
Performance			
Frequency Response(at 1 Watt)	20Hz-20KHz, +0-1dB		
Total Harmonic Distortion(THD)	<0.5%,20Hz-20KHz		
Intermodulation Distortion60Hz and 7KHz at 4:1from full rated output to -30dB	= / <0.35%		
Slew Rate	> 20V/us		
Voltage Gain	33dB	35.3dB	37.8dB
Damping Factor(8ohms)10Hz-400Hz	> 200		
Signal-to-Noise Ratio (below rated power,20Hz to 20kHz. A-weighted)	> 100dB		
Crosstalk(below rated power) At 1kHz At 20kHz	-75dB -58dB		
Input Sensitivity for full rated power at 8Ω	0.775V or 1.4V		
Input impedance(nominal) Balanced Unbalanced	20K ohms 10k ohms		
Construction			
Protection	Protection against short circuits, no-load, on/off muting, RF interference.		
Ventilation	Flow-through ventilation from front to back		
Cooling	Internal heat sinks with forced air. Fan cooled, speed regulated, thermal protection		
Power cord specification	Plug : 10A , 250V Wire:3x1.0mm		
Chassis size(unit mm)	482x227x88		
Net weight	8.0kg		



Safety Operation

Cautions

- 1.This amplifier only can plug in the AC power socket which the user's manual instructs or the specification is shown on this adapter. Or else it may damage the amplifier and cause a fire or electric shock.
- 2.Do not place heavy objects (including this amplifier) on the power cord, or else it may damage the power cord and then cause an electric shock or fire.
- 3.Do not expose the amplifier in the fume, high humidity, high temperature and dust accumulation place and use.
- 4.Do not put this amplifier sidelong or upside down, use it in a good air flow environment.
- 5.When abnormality happen in the operation process, such as smoke, odor, noise, or foreign bodies, liquid entering into the amplifier, please turn off the amplifier immediately, and unplug the socket from the AC power socket
- 6.When abnormality happen, please don't open the chassis and rebuilt or repair the amplifier by yourself, if the internal is sure to need repair and maintenance, please contact the dealers to deal with it.

Operation :

- 1.When the speaker is connected to the amplifier output socket, it only can use the speaker special cable and connect it in accordance with the provisions.
- 2.When connect the amplifier, please close all the instruments, audio equipments and speakers.
- 3.Before turning on the amplifier, please turn down the volume to a minimum.
- 4.If you do not use this amplifier for a long time, please unplug the power cord from the AC mains socket.
- 5.When unplug the power plug from the AC power socket, please grasp the plug. Do not directly pull the cable. Otherwise it can damage power cord and then lead to a fire or electric shock.

Rated power /model	AK3-1200	AK3-1500
1kHz(HIA)with0.5%THD		
8Ω stereo(per channel)	2x600W+1x1470W	2x600W+1x1600W
4Ω stereo(per channel)	2x890W+1x2300W	2x900W+1x2470W
8Ω bridge mono	2050W	2100W
Performance		
Frequency Response(at 1 Watt)	20Hz-20KHz, +0-1dB	
Total Harmonic Distortion(THD)	<0.5%,20Hz-20KHz	
Intermodulation Distortion60Hz and 7KHz at 4:1from full rated output to -30dB	= / <0.35%	
Slew Rate	>20V/us	
Voltage Gain	2x34dB+37.9dB	2x35.2dB+38.4dB
Damping Factor(8ohms)10Hz-400Hz	>200	
Signal-to-Noise Ratio (below rated power,20Hz to 20kHz. A-weighted)	>100dB	
Crosstalk(below rated power) At 1kHz At 20kHz	-75dB -58dB	
Input Sensitivity for full rated power at 8Ω	0.775V or 1.4V	
Input impedance(nominal) Balanced Unbalanced	20K ohms 10k ohms	
Construction		
Protection	Protection against short circuits, no-load, on/off muting, RF interference.	
Ventilation	Flow-through ventilation from front to back	
Cooling	Internal heat sinks with forced air. Fan cooled, speed regulated, thermal protection	
Power cord specification	Plug : 10A , 250V Wire:3x1.0mm	
Chassis size(unit mm)	482x227x88	
Net weight	7.8kg	

Main Operation Key& Functions

Front Panel



Power switch: It can turn on/off the amplifier. When turn on, the POWER LED lights.



Fault LED: When circuit protection works, the LED will light, especially when the heat-sink overheat or detect the DC voltage in the amplifier, the LED will light. Turn on the amplifier within three seconds, the amplifier is ready to work, the LED will shine. When finish start or the problem is removed, the LED will extinguish, and resume working normally.



Clip LED: When the output signal distortion of the corresponding channel exceeds 1%, the LED will light, because of the signal level is too high, and have been cut-off.



Signal LED: when there is the input signal, the LED will light, if not, please check the gain settings, if necessary, can increase the gain. Check the input connection and signal audio source. If the Clip LED shines a little or shows no signal, check the output wire whether it is short-circuit or not.



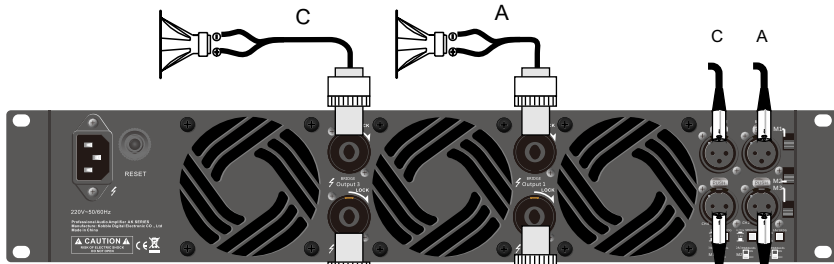
Gain control: use to set the output level of each channel

Specification

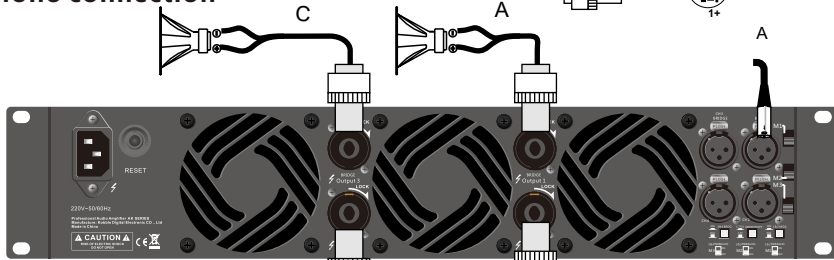
Rated power /model	AK2-500	AK2-700	AK2-1000	AK2-1300	AK2-1500
1kHz(HIA)with0.5%THD					
8Ω stereo(per channel)	2x500W	2x700W	2x1000W	2x1380W	2x1520W
4Ω stereo(per channel)	2x950W	2x1100W	2x1650W	2x2100W	2x2300W
8Ω bridge mono	1900W	2250W	3350W	4350W	4600W
Performance					
Frequency Response(at 1 Watt)	20Hz-20KHz, +0-1dB				
Total Harmonic Distortion(THD)	<0.5%,20Hz-20KHz				
Intermodulation Distortion60Hz and 7KHz at 4:1from full rated output to -30dB	= / <0.35%				
Slew Rate	>20V/us				
Voltage Gain	32.8dB	35dB	36dB	37.8dB	38.3dB
Damping Factor(8ohms)10Hz-400Hz	>200				
Signal-to-Noise Ratio (below rated power,20Hz to 20kHz. A-weighted)	>100dB				
Crosstalk(below rated power) At 1kHz At 20kHz	-75dB -58dB				
Input Sensitivity for full rated power at 8Ω	0.775V or 1.4V				
Input impedance(nominal) Balanced Unbalanced	20K ohms 10k ohms				
Construction					
Protection	Protection against short circuits, no-load, on/off muting, RF interference.				
Ventilation	Flow-through ventilation from front to back				
Cooling	Internal heat sinks with forced air. Fan cooled, speed regulated, thermal protection				
Power cord specification	Plug : 10A , 250V Wire:3x1.0mm				
Chassis size(unit mm)	482x227x88				
Net weight	7.5kg				

Connection Mode

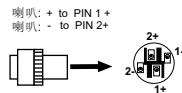
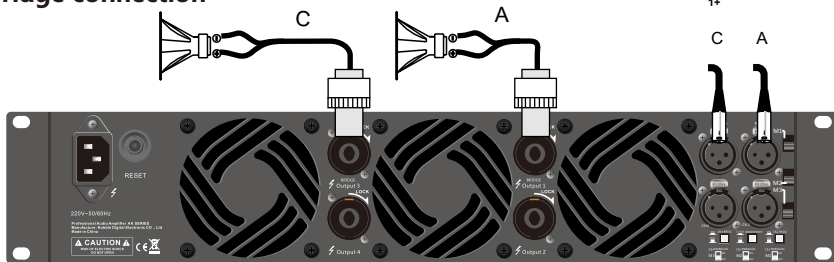
Speakon output connection(4CH) Stereo connection



Mono connection



Bridge connection



Main Operation & Functions

Rear Panel



	Mains socket: Check the selected voltage whether it is correct or not before using this amplifier. If the voltage is not correct, it may damage the amplifier and cause fire.
	Signal input: The input interface connects to the mixer directly. The input of the corresponding channel and output connector are connected together to provide the fixed connection, do not need to consider the power switch setting.
	Parallel output XLR connector: this socket is parallel with the input XLR socket, input directly output via this socket, AK series 2CH and 3CH models have this function.
	Output connection: Amplifier output channel, it provides the output by connecting the SPEAKON connector

Dial Switch			Key Switch Function			
3&4 PARALLEL	2&3 PARALLEL	1&2 PARALLEL	ON 3&4 BRDG	0.775V SENSITIVITY	ON 1&2 BRDG	
M3	M2	M1	OFF	1.4V	OFF	

Channel mode switching switch:

Mainly complete the switching of MONO mode and BRIDGE/PARALLEL by adjusting. There are M1/M2/M3 three dial switches on the rear panel, shown as M1 silkscreen, when M1 dial switch faces up which means CH1 is parallel to CH2, when it faces down which means it is off. M2 and M3 dial switch are the same principle. Key switch function: when key switch faces down which means CH1 is parallel to CH2, when it faces up which means it is off.

Mode Switch:

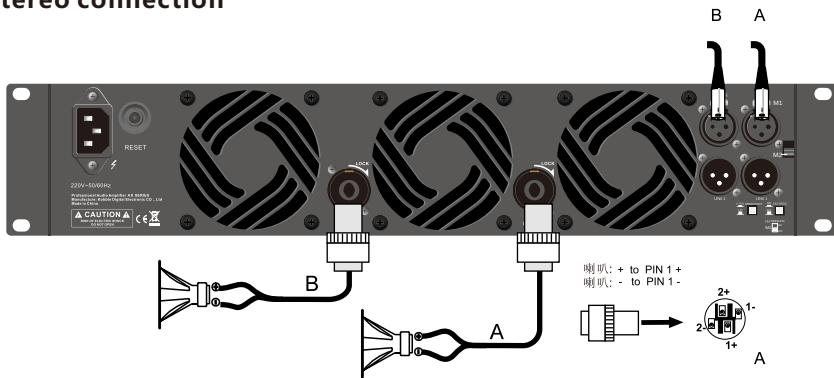
MONO mode: make the two channel work independently, CH1 input signal by CH1 output, CH 2 input by CH2 output.
BRIDGE mode: make CH1 input signal from the BRIDGE output socket output, must use the volume control of CH1 to adjust the volume
PARALLEL mode: make CH1 input signal by CH1 and CH2 output socket output. The input socket of CH2 is no effect. Channel's volume can be adjusted independently

Sensitivity mode: It mainly adjusts the ratio between the input and output.

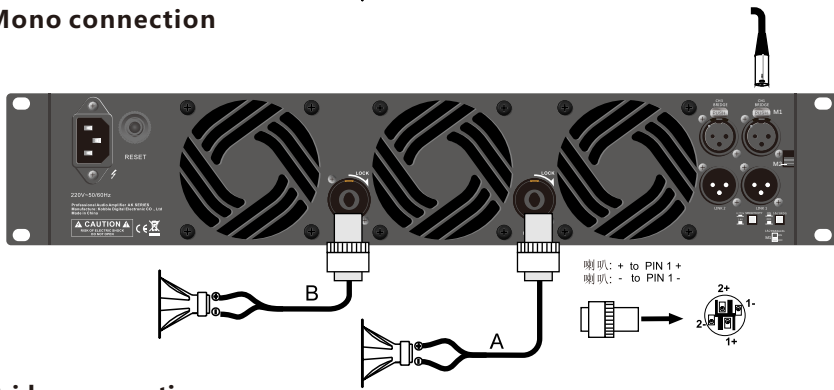
Connection Mode

Speakon output connection(2CH)

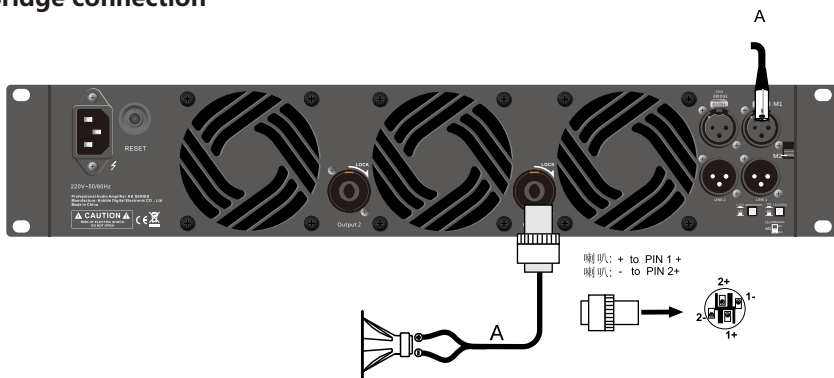
Stereo connection



Mono connection



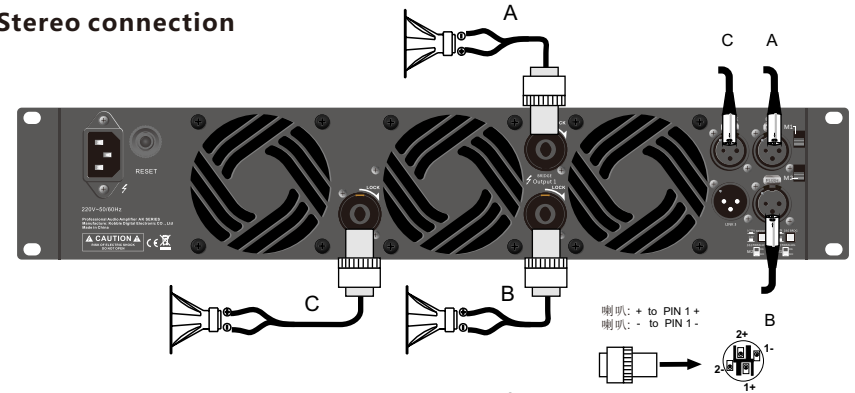
Bridge connection



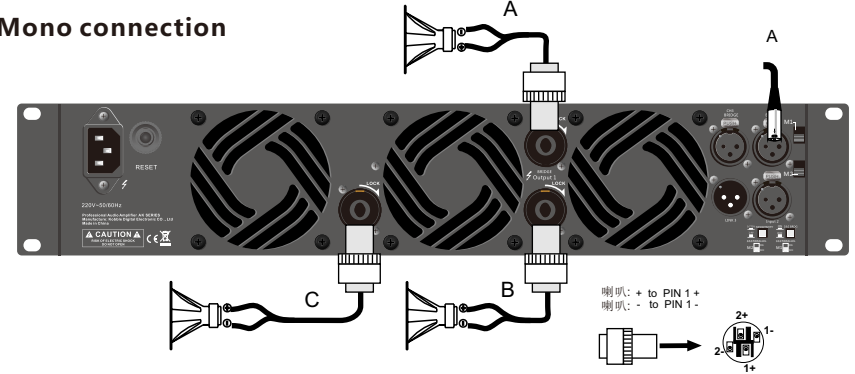
Connection Mode

Speakon output connection(3CH)

Stereo connection



Mono connection



Bridge connection

