EAST
PROFESSIONAL PRODUCTS

Professional Power Amplifier

USER'S MANUAL/使用说明书

300XL+500XL+900XL+1500XL+2000XL

目　录

前言

感谢您购买了SAECHINA专业音响设备，在使用之前请详细阅读本使用说明书，它将给你正确的指引，并有助于设备的正常工作及延长其使用寿命。所有SAECHINA产品享有一年质量保证免费保修期。

SAECHINA致力于发展高科技、高性价比的专业音响产品。到目前为止，我们拥有70个不同型号的产品，涵盖高、中、低三个档次，可以为不同的场合提供适用的高科技产品。除了大众化的产品之外，我们更拥有目前世界最先进的电脑遥控功放和遥控系统。在研究开发过程中，我们为每一件产品注入了高科技的精髓，创造出高品质的产品。我们还运用“ISO质量管理体系”规范管理，确保产品质量符合要求，同时拥有完善的售后服务。

SAECHINA最终的目标：以卓越的产品质量，优异的工作质量和服务质量，满足顾客要求，并超越客户的期望。

重　要　指　引

1. 使用产品前请仔细阅读本使用说明书，并保留所有的说明书以作进一步参考。
2. 必须使用与后板标称电压相符的电源，若由于使用电压的不恰当而导致的设备损坏将作为有偿服务。
3. 确保设备的地线和电源的地线相通，电源的地线必须与大地地线相通。
4. 接上电源时，产品处于待机状态，机内部分元件已通电。
5. 禁止功放在桥接状态下输出端和示波器的探头相连，否则对功放及测试设备都会造成损害。
6. 功放的输入电平不要超过标称的灵敏度值。
7. 不要将功放的某一个声道的输出接到另一个通道的输入。不要将功放的输出并联或串联到另一台功放的输出使用。
8. 配置功放的时候，功放的功率必须比音箱的标称功率大50%-100%。
9. 必须保证功放当前的使用状态和输入模式的设置一致。
10. 在拔掉电源线、信号线或拨动输入模式选择开关、限幅器断开前必须先把功放电源关掉。
11. 功放的音量旋钮通常设到-80dB处。
12. 在一个信号要分给多台功放使用的情况，建议使用信号分配器。
13. 确保功放放置在干燥通风的场地，不要将功放的进风口、出风口堵塞。

安全注意事项

在开始使用功放前请仔细阅读此安全指引
安装设备时：
- 必须在平坦的地方安装，不能倒放功放。
- 不能在有水或潮湿的地方安装。
- 将功放远离热源，如辐射体或其他热源。

在连接功放时请记住：
- 在连接功放前请仔细阅读本说明书。
- 仔细连接功放的每个接口，否则，可能会由于线路断开而导致噪声、出现故障或电击等现象。
- 为避免电击，请不要打开顶盖。
- 确认正确的交流电压后，将电源线连接至电源插座上

触电

警告：机内具有危险电压的非绝缘部分，足以致人于触电之危。因而不要打开机盖，维修时必须请专业人员检修，或送返厂家。为防止起火或触电事故，请不要让机器靠近热源，或暴露在雨中或潮湿环境里。

功能描述

1. 电源部分

1.1 非常高的开关电源功率密度：在2U（深度11英寸）的标准机箱空间里面提供3.2KW连续正弦波功率，为行业内首屈一指。

1.2 300XL-500XL采用半桥LLC双环谐振开环自激谐振的SMPS开关电源。半桥LLC双环谐振提供高效安全的功率传递，开关在零电压状态下开通（ZVS）在零流状态下关断（ZCS），同时降低电源对功放的干扰。

1.3 1500XL-2000XL采用LLC双环谐振半桥软开关它激SMPS开关电源。由于本机功率要求更大，辅助电源用变频零电压反激。相互隔离，增加输出电解电容到6800UF/80V，放置到功放端，加强了大动态时的储能。

1.4 普通的开关电源的负载是恒定的负载，但功放开关电源面对的是一个最高以0.0001秒速度变化阻抗的负载，而且电流从0安培上升到额定输出电流的最快变化时间也是0.0001秒。SMPS的开关电源设计已经充分考虑到上述的极端工作状态，能充分满足音乐播放的大动态要求。

1.5 功率电路是全高频电路，杜绝高频电流经过低频部分的滤波电解电容。

1.6 SMPS的电源有非常好的宽余度，可以在180-260V之间工作，不会烧毁。

2. 功放部分

2.1 SMPS功放有非常高的8欧/4欧整机工作效率：300XL-500XL采用AB类功放，在8欧、4欧额定功率情况下整机效率分别达到65%、60%；1500XL-2000XL 采用CLASS 2H 功放分别达到70%、65%。

2.2 SMPS功放在2U标准机箱空间里面，能输出 2000W的连续正弦波功率。

2.3 SMPS采用输出级晶体管直接与散热器连接的安装方式；降低热阻提高了传导效率延长了晶体管的使用寿命。

2.4 散热器及风道居中，风扇放在功放与开关电源之间提高了风扇效率的同时又将开关电源与功放很好的隔离，无其它干扰源串入使底噪更小，更安静。

2.5 功放主电路与保护系统分开设计，提高了信号走线的完整性，整机电路结构更稳定。

2.6 整机工艺采用SMT与插件器件相接合，输入板全SMT工艺，电源与功放电路全部采五环金膜电阻。

2.7 机箱全钢制作内部所有PCB固定柱全部采用铜柱支撑，整个机箱更坚固耐用，也是专业机的表现。

出厂设定

1.所有音量调节的旋钮设置在"-80dB"的位置；

2.电源开关打设置在"0FF"的位置；

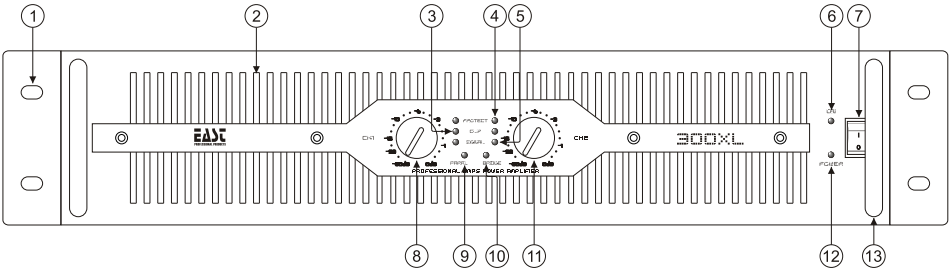
3.工作模式选择开关设置在"STEREO"的位置；

4.灵敏度选择开关设置在"26dB"的位置；

重要指示：其它控制、调节功能在使用说明书上没有介绍的，都会有可能因其它因素引起的机械危险或辐射。

XL系列面板/后板描述

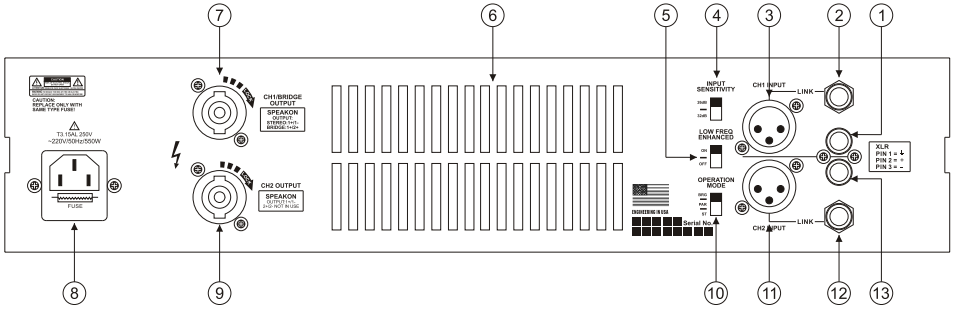
300XL-500XL-900XL-1500XL-2000XL面板描述



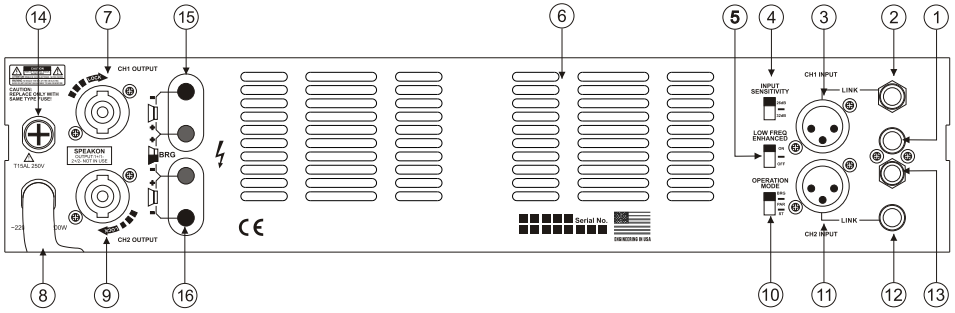
300XL-500XL--900XL-1500XL-2000XL面板功能描述

1. 安装孔
   用于安装到机柜时固定用。
2. 气流的入口
   此处是散热的气流入口，不要有任何东西堵塞。
3. 削峰指示灯（CLIP）
   此指示灯点亮时表示功放已经达到了最大输出功率（削峰），约为0.5%的失真。此时需要调低输入信号确保功放在低失真状态下工作。
4. 保护指示灯（PROT）
   此指示灯点亮时表示功放已经处于保护状态，其包含有：输出短路保护、过热保护、直流保护、VHF保护、连续的非音乐的高频信号（自激或长时间的啸叫）。
5. 信号指示灯（SIG）
   此指示灯点亮时表示功放的输出端已经有信号，灵敏度约为0.35V。
6. “电源开ON”指示灯
   此指示灯点亮时表示功放的主电源系统已经工作，否则相反。
7. 电源开关
   用此开关可以开机和关机，按上部分(1)-开机、按下部分(0)-关机。
8. 通道1的音量控制器
   功放工作于桥接模式：此控制器控制两个通道的音量，此时通道2的音量控制器失效。
   功放工作于立体声或并接模式：此控制器只控制通道1的音量。
   增益控制范围-80dB~0dB，有效旋转角度为280度。
9. 橙色的并接指示灯
   此指示灯点亮表示功放工作于并接模式。
10. 橙色的桥接指示灯
    此指示灯点亮表示功放工作于桥接模式。
11. 通道2的音量控制器
    功放工作于桥接模式：此控制器失效，此时通道的音量由通道1控制器来控制。
    功放工作于立体声或并接模式：此控制器只控制通道2的音量。
    增益控制范围-80dB~0dB，有效旋转角度为280度。
12. 待机电源指示灯
    电源线接通本机器则该灯点亮，直到面板电源开关打到ON，电源ON灯亮,该灯才熄灭。
13. 拉手
    用于方便搬运。

300XL-500XL-900XL后板描述



1500XL-2000XL后板描述



300XL-500XL-900XL-1500XL-2000XL 后板功能描述

1. 通道1 不平衡 RCA输入
2. 通道1直通插座
   与通道1的XLR 输入并联，提供一个与输入信号一样的输出信号。
3. 通道1 XLR 输入
   此XLR输入为平衡输入。连接到上一级的周边处理设备。
4. 输入灵敏度开关
   此开关用于选择功放的输入灵敏度：32dB/26dB
5. 低频提升功能开关。
   当开启时，能感到明显的低频丰满，顺畅有力，不干不燥的音质。
6. 出风口
   散热的气流出口，使用的时候请勿堵塞出风口。
7. 通道1的输出SPEAKON接口
   用此输出插座（SPEAKON）连接到喇叭，立体声接法为：正极接1+脚、负极接1-脚；桥按接法为：正极接1+脚、负极接2+脚。（1500XL-2000XL无桥接功能）
8. 电源线（插座）（内置保险管）
   此电源线插座用于功放连接电源。内装有标准规格的保险管，用于功放过流或故障时的保护。如果功放已经接上电源待机指示灯没有点亮时，请检查保险管的情况，如发现保险管已熔掉，在故障排除后，必须更换同一规格的保险管。（1500XL/2000XL无内置保险管）
9. 通道2的输出SPEAKON接口
   输出插座（SPEAKON）连接到喇叭，接法为：正极接1+脚、负极接1-脚；当功放工作于桥接的模式时，此接口闲置。
10. 工作模式选择开关
    此开关用于选择功放的工作模式，立体声模式：2个通道信号独立输入及2个通道独立输出；
    并联模式：1 个通道信号独立输入（从通道1输入 ） 2个通道独立输出；
    桥接模式：1 个信号输入（从通道1输入）从1与2的正输出。

300XL-500XL-900XL-1500XL-2000XL 后板功能描述

11. 通道2 XLR 输入
    此XLR输入为平衡输入。连接到上一级的周边处理设备。
12. 通道2 不平衡 RCA输入
13. 通道2直通插座
    与通道2的XLR 输入并联，提供一个与输入信号一样的输出信号。
14. 保险管座（1500XL/2000XL）
    此保险管座内装有标准规格的保险管，用于功放过流或故障时的保护。如果功放已经接上电源待机指示灯没有点亮时，请检查保险管的情况，如发现保险管已熔掉，在故障排除后，必须更换同一规格的保险管。
15. 通道1喇叭接线柱输出（1500XL/2000XL）
    红色端子接喇叭的正端，黑色端子接喇叭的负端，桥接时只使用红色接线端子。
16. 通道2喇叭接线柱输出（1500XL/2000XL）
    红色端子接喇叭的正端，黑色端子接喇叭的负端，桥接时只使用红色接线端子。

基本操作

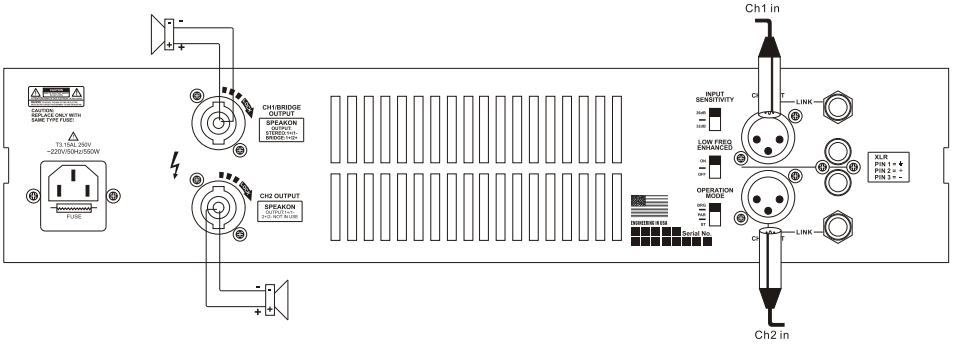
开机
1.接入信号源再将电源插接入电源，此时机器内部已经通入电源，进入待机状态。
2.开机：将电源开关按至" I "，机器开启，待机灯熄，电源指示灯（ON）点亮。
3.当功放通电后保护灯点亮，机器自检约10秒。检测正常后保护灯熄灭，调节面板CH1/CH2的音量旋钮来控制想要达到的音量设置。

关机
当使用完毕时，将CH1/CH2的音量控制旋钮调节到最小音量处（-80dB），此时可以安全关闭机器。
关机：将电源开关按至" O "，机器关闭，电源指示灯（ON）熄，待机灯点亮。

注意：
1.功放开机后不能插拔输入信号源，否则将会产生冲击而损坏功放与音箱。
2.当机器插入电源后，表示内部已经通电，面板上的电源开关虽然在关机的位置，但整机仍处于待机工作状态，如超过三小时以上不用，应将电源线拔掉以断电。

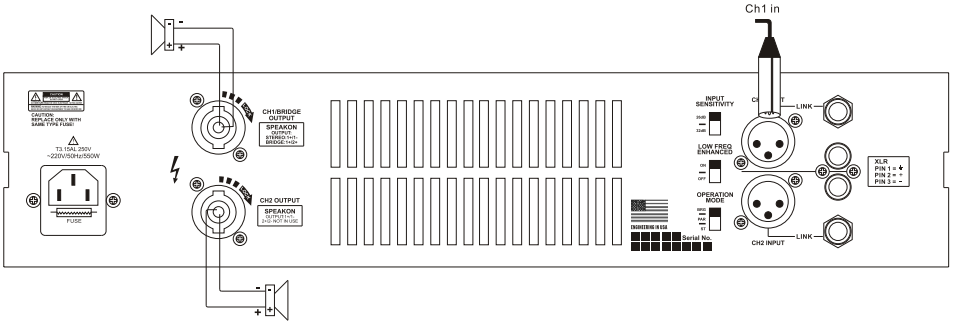
300XL-500XL-900XL连接模式设置

立体声模式设置



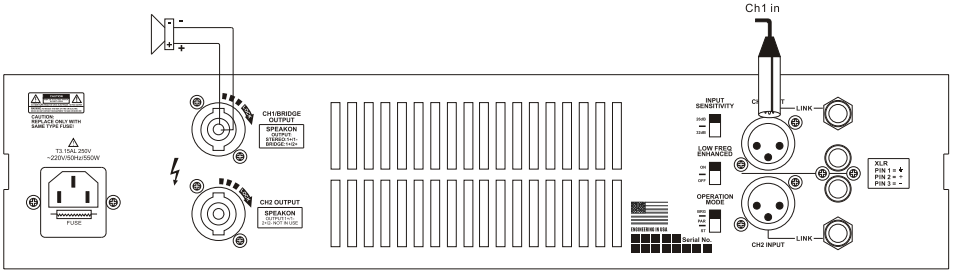
在这个模式里，连接两个通道输入接口到音源（如调音台、CD等）的输出端，设置功放的工作模式为“STEREO”的位置，把两个通道的音量控制调到合适的位置，连接两个SPEAKON插座到两个喇叭。

并接模式设置



在这个模式里，连接通道1输入接口到音源（如调音台、CD等）的输出端，设置功放的工作模式为“PARALLEL”的位置，把两个通道的音量控制调到合适的位置，连接两SPEAKON插座到两个喇叭。

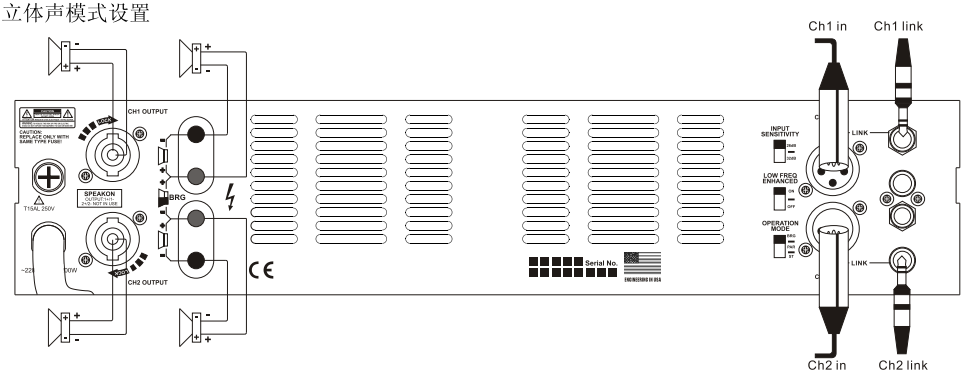
桥接模式设置



在这个模式里，连接通道1输入接口到音源（如调音台、CD等）的输出端，设置功放的工作模式为“BRIDGE”的位置，把通道1的音量控制调到合适的位置，连接“BRIDGE OUTPUT”的SPEAKON到喇叭。

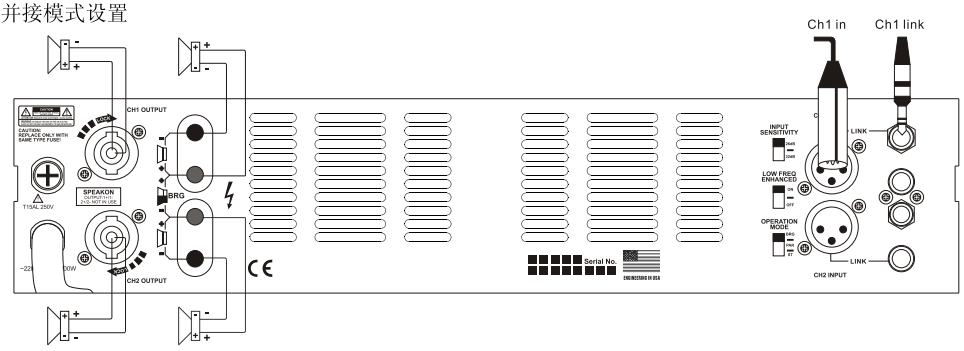
1500XL-2000XL连接模式设置

立体声模式设置



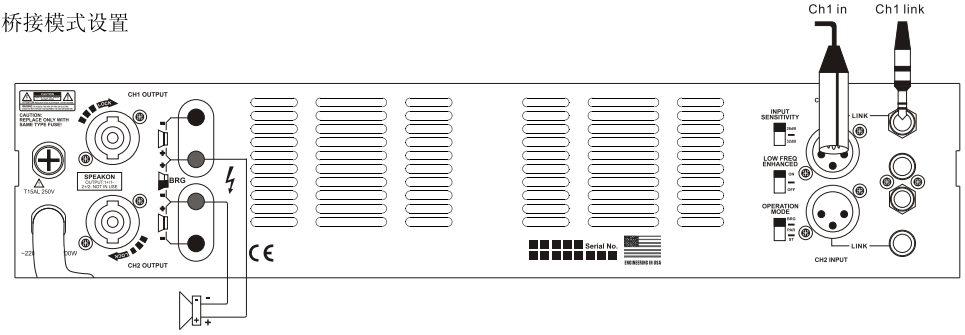
在这个模式里，连接两个通道输入接口到音源（如调音台、CD等）的输出端，设置功放的工作模式为“STEREO”的位置，把两个通道的音量控制调到合适的位置，连接两个SPEAKON插座到两个喇叭。

并接模式设置



在这个模式里，连接通道1输入接口到音源（如调音台、CD等）的输出端，设置功放的工作模式为“PARALLEL”的位置，把两个通道的音量控制调到合适的位置，连接两SPEAKON插座到两个喇叭。

桥接模式设置



在这个模式里，连接通道1输入接口到音源（如调音台、CD等）的输出端，设置功放的工作模式为“BRIDGE”的位置，把通道1的音量控制调到合适的位置，连接“BRIDGE OUTPUT”的SPEAKON到喇叭。

可靠性保护功能

1. 削峰压限
   此功能用于防止危险的削峰信号输送到喇叭并危险到喇叭单元，削峰压限监测功放的输出产生的失真，当失真超过0.5%，削峰压限将降低输入信号，以保证信号不失真（削峰）。
2. 过热保护
   当功放长时间满负载工作，风扇已经达到最高速，如果这状态持续下去，温度升到105摄氏度以上功放将会过热保 护，功放面板(PROT)保护灯点亮无输出.要求客户使用时正确操作，建议不接低于2Ω的负载,保持功放风扇气流畅通无阻.一般环境温度不大于30摄氏度不会出现因超温保护而无功率输出的情况。
3. VHF保护
   如果功放的输出达到一定幅度、且频率超过10KHz的信号,如MIC反馈啸叫,连续3秒后，功放将进入VHF保护，功放面板(PROT)保护灯点亮，功放无输出,喇叭没有声音，保护启动后10秒会自动恢复；如果此时输出信号没有改变，将会继续启动VHF保护。
4. 短路保护
   本公司所有系列的功放都具有输出端的短路保护，此保护能让输出的晶体管工作于它的安全区内。输出短路时，功放面板(PROT)保护灯点亮，功放无输出，如果短路条件撤消后，10秒后会自动恢复正常。
5. AC市电电源保护
   如果AC电源电压低于允许的工作电压（~160V），电源将自动关机（保护），直到AC电源电压正常。
6. 直流保护
   如果输出信号中带有较大的直流电压时（≥2.6V），功放内的直流保护电路就会启动，功放面板（PROT）保护灯点亮，功放无输出，为免喇叭受损。

适用范围

1. 本说明书适用于蚩声演出器材制造有限公司生产制造并投放市场的XL系列的产品型号；
2. 适用于大型流动演出、乐队表演、DISCO、夜总会等需要专业扩声的场合。

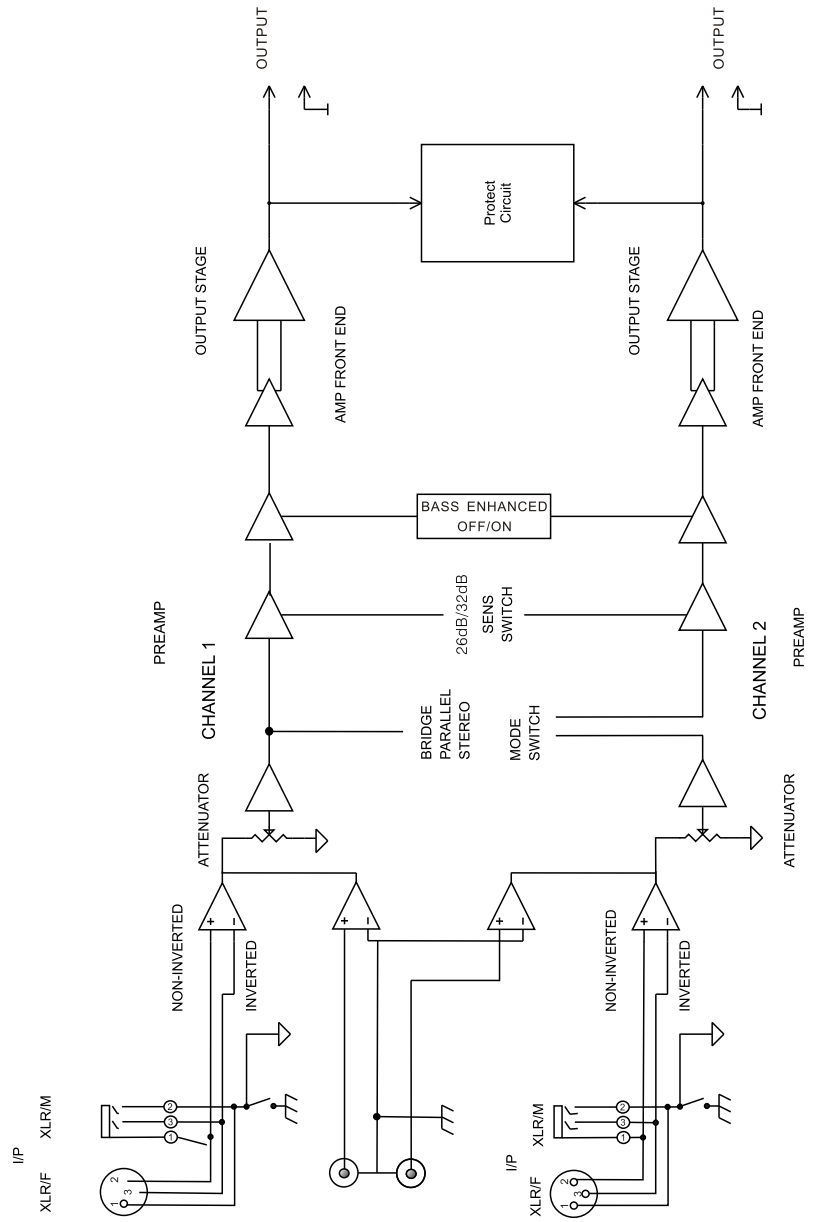
维护保养和故障排除方法

下面是一些简单的办法来检查功放是否损坏：

1. 没有输出
   如果信号指示灯是按输入信号的大小点亮的，那么功放则没有问题，请检查SPEAKON输出是否接触良好；
2. 很小的信号输出
   如果信号指示灯是点亮的，而且削峰、压限指示灯也点亮，则请检查功放的输出端是否有短路的现象；如果信号指示灯是点亮的，而且保护指示灯也点亮，则功放的状态是处于保护，此时保护有两个可能：一是过热保护，二是VHF保护，通过把信号取消，就可以检测是否VHF保护，当然如果功放的外壳的温度很高，那很大可能是过热保护；如果市电输入电压过低，会引起功放的欠压保护，最低工作交流电压为160 V 。
3. 通过以上的检查，功放的现象还是存在此时则需要把功放送到指定的服务点，由专业人员检修；

注意：如果功放还在保修期内的话，请保持机箱的完整无损，也不可以拆开功放的任何机械配件，否则蚩声将可以不履行保修服务！！！

原理简图


OUTPUT
OUTPUT
Protect Circuit
OUTPUT STAGE
AMP FRONT END
OUTPUT STAGE
AMP FRONT END
BASS ENHANCED OFF/ON
PREAMP
CHANNEL 1
26dB/32dB SENS SWITCH
BRIDGE PARALLEL STEREO
MODE SWITCH
CHANNEL 2
PREAMP
ATTENUATOR
ATTENUATOR
NON-INVERTED
INVERTED
NON-INVERTED
INVERTED
I/P
XLR/M
XLR/F
I/P
XLR/M
XLR/F

技术参数

型号	误差范围	300XL	500XL	900XL	1500XL	2000XL
8欧 立体声功率*	-2.5%,10%	110WX2	200WX2	310WX2	450WX2	600WX2
4欧 立体声功率*	-2.5%,10%	170WX2	300WX2	500WX2	750WX2	1000WX2
2欧 立体声功率**	---	---	450W x2	600WX2	1000WX2	1250W X2
8欧 桥接功率*	-2.5%,10%	360W	600W	1000W	1500W	2000W
4欧 桥接功率**	---	---	600W	1200W	2000W	2600W
频率响应	+0/-0. 5dB	20Hz-20KHz@8Ω +0dB/-0.5dB				
总谐波失真	±0.01%	＜0.05%	＜0.05%	<0.05%	<0.05%	<0.05%
转换速率	±2V/μs	>20V/μs	>15V/μs	20V//μs	20V/μs	20V/μs
阻尼系数	+30/-10	>150	>150	>200	>200	>200
动态范围	±5dB	≥80dB	≥80dB	≥80dB	≥80dB	≥80dB
信噪比	±5dB	≥85dB	≥85dB	≥90dB	≥90dB	≥90dB
分离度	±5dB	≥65dB	≥65dB	≥70dB	≥70dB	≥70dB
输入灵敏度	±0.5dB	26dB/32dB 1.48V/0.75V	26dB /32dB 2.2V/1.05V	26dB/32dB/ 2.48V/1.244V	26dB/32dB 3.1V/1.55V	26dB/32dB 3.46V/1.73V
电压增益	±0.5dB	26dB/32dB	26dB /32dB	38dB	26dB/32dB	26dB/32dB
输入阻抗	---	平衡20K 不平衡10K	平衡20K 不平衡10K	平衡20K 不平衡10K	平衡20K 不平衡10K	平衡20K 不平衡10K
输出阻抗	---	≥2Ω	≥2Ω	≥2Ω	≥2Ω	≥2Ω
输出级电路类型	---	Class AB	Class AB	Class AB	Class 2H	Class 2H
整机效率	±5%	65%	62%	≥65%	≥68%	≥68%
毛重（公斤）	±0.5	6KG	6KG	8.75KG	11KG	11.10KG
纸箱外尺（厘米）	±0.5	58.5x45x16		58.5x50x16		

注意：*,按EIA标准测试所得；
**,按THD＝1%，用1KHz，40ms脉冲信号测试所得；
※以上测试结果是在标准电源波形及稳压条件下测试得出。

CONTENTS

PREFACE

Thank you for your purchase of SAECHINA Professional Audio Equipment. Please read the user's manual carefully before you use the product, it will give you correct guidance, and it is useful for the equipment's normal working and extending its life.
All our products are promised for one year free of charge quality warranty. The staff of SAECHINA have always been trying to develop their professional audio equipment with high-tech, high performance and with competitive price. Up to now, we own 70 different models, covering high, secondly, and low three levels and are able to provide high quality equipments for different kinds of occasions. In addition to universal used product, we even own the most advanced remote control amplifiers and power link system. In the process of research and development, we have been trying to inpour high-tech soul to every product, and to create high quality equipments. Further, we have been adopting "ISO Quality Guarantee System" to supervise every product whether it has conformed with strict and professional requirements, whether it has received perfect after-sales services.
We do that only for one purpose: meet customers' requirement with excellent product quality, best working quality and service quality, moreover exceed customers' expectation.

IMPORTANT PRECAUTIONS

1. Before using the product, please read the user manual carefully and retain it for further reference.
2. Must use the power supply accordance with the voltage label on the rear panel, the product will not be guaranteed if for the improper voltage used.
3. The grounding cable of the equipment must be connected with the power supply grounding cable. Please make sure the power supply grounding cable is connected with the ground.
4. When this model is connected to the power supply, the standby LED is on. Some components are connected to the electricity.
5. At bridge mode, the output connector of amplifier should not be connected with the head of the oscillograph, or it will cause damage to the amplifier and the test equipment.
6. The input level of the amplifier shall not be higher than the rated sensitivity value.
7. Don't connect the output of any channel with the input of another channel. Don't parallel or serial connect the output of one amplifier to the output of another amplifier.
8. The power of amplifier must be 50%-100% higher than the rated power of speaker.
9. Make sure the current using status of the amplifier is accordance with the input mode.
10. Make sure the power supply is off before taking out the power supply cable, signal cable or switch the input mode and limiter.
11. Usually the volume control is set at -80dB.
12. If one signal has to be separated for several amplifiers, we suggest using signal distributor.
13. Please let it be in the dry and ventilated environment. Don't obstruct the air entrance and air exit.

Safety instructions

Read all safety instructions before operating amplifier
Install equipment as follows:

- Install in a flat place, not bending or curved.
- Do not install near water and moisture.
- Place power amplifier away from heat sources, such as radiators or other heat source.

Keep in mind the following when connecting amplifiers:

- Read the user manual before connecting the amplifier.
- Connect each connection of the amplifier perfectly. If not, it may cause hum, damage, electric shock in case of disconnection.
- To prevent electric shocks, do not open top cover.
- Connect the power cord with safety after check the AC power.

CAUTION

Warning: with dangerous voltage non insulation conponents inside enough to cause electric shock. do not open. return to authorized service center or repaired by specified people if failed.
to reduce the risk of fire or electric shock do not expose this equipment to rain or moisture.

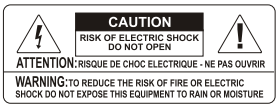
Function description

1.Power supply
1.1 It is a very high density power level of SMPS amplifier: It can supply constant 1.2kw sine wave power in 2U height and 11 inch depth case. It is the top level in this industry.
1.2 It use LLC SMPS to provide power safely and efficiently. It turn on ZVS when 0 voltage and shut off ZCS when 0 current. And it depress the interfering to the amplifier.
1.3 The normal SMPS load is invariable, but SMPS load of amplifier is fluctuate for impedance change fartest in 0.0001s. And the shortest time from 0 current to rated current is also 0.0001s. The SMPS used by us designed in view of the critical working situation and full fil the dynamic requirement of music playing.
1.4 Power circuit is all high frequency circuit to avoid the high frequency current pass through the low frequency current capacitor & electro analysis.
1.5 SMPS has good performance from 180-260V and will not destroied.

2. Amplifier
2.1 SMPS amplifier has very high working efficiency in 8Ohms & 4 Ohms. XL series is Class AB amplifier, working efficiency at rated power can reach 65% & 60% at 8Ohms & 4 Ohms.
2.2 It can provide 1200w constant sine wave power in 1/2of 2U case.
2.3 The output transistor connect with the heat sink directely can increase the heat transmit efficiency and extend the transistors life.
2.4 Center the air passage and heat sink, and let the 80x80 fan between the power supply module and main module can increase the efficiency of fan and separate the 2 working modules as well as to decrease the noice.
2.5 The main amplifier circuit and protection system designed separately improved the complete signal circuitry.
2.6 The most process technics is SMT.
2.7 The amplifier case is made of steel and all the PCB is supported by copper column. It is more firmly and represent the high quality of professional amplifier.

Ex-factory setting

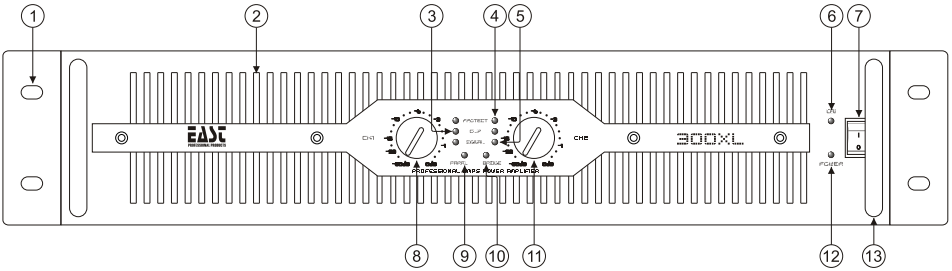
1. All the volume adjustment button was set at "-80" .
2. The power switch was set at "OFF".
3. Working mode selector switch was set at "STEREO".
4. Sensitivity selector switch was set at "26dB".



Important direction: Other control functions and adjustment functions that do not introduce in the user's manual, may cause mechanical danger or radiation due to other outside factors.

XL series panel description

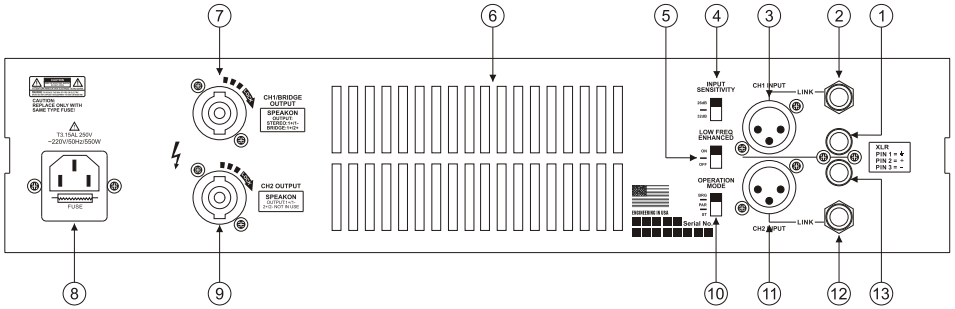
300XL-500XL-900XL-1500XL-2000XL front panel



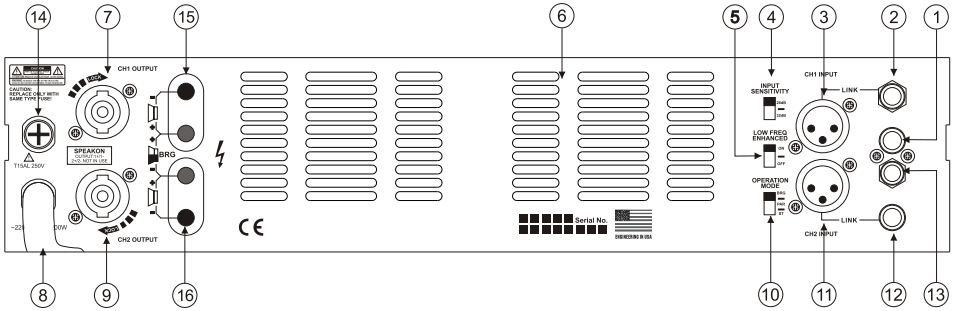
300XL-500XL-900XL-1500XL-2000XL front panel function introduce

1. Installation Socket
   Use to fix when install to the rack.
2. Air Entrance
   This part is the air entrance. Don't obstruct it.
3. CLIP indicator(CLIP)
   When this indicator is on, it means the amplifier has reached its maximum output power (CLIP). The distortion is about 0.5%. Then you need to turn down the input signal to make sure the amplifier work under low distortion.
4. Protection Indicator(PROT)
   When this indicator is illumed, it means the amplifier is on the protection status, includes output short circuit, over-heat, DC, VHF, constant non-music high frequency signal (self-excitation or long time whistle).
5. Signal Indicator(SIG)
   When this indicator on, it means the output port of the amplifier already has signal, and the sensitivity is about 0.35V.
6. “Power ON” Indicator
   When this indicator is on, it means the main power supply system of amplifier has been working. Otherwise, it is opposite.
7. Power swtch
   This switch is used for power on and off. Press the upper part to switch on, and lower part to switch off.
8. CH1 volume control
   In bridge mode, this potentiometer controls two channels volume, the CH2 potentiometer invalid. In stereo or parallel mode: this potentiometer just controls CH1 volume.
   Gain control range: -80dB~0dB, available turning angle is 280 degree.
9. “Parallel” indicator in orange color
   While this indicator lights, the amplifier is on parallel mode.
10. “Bridge” indicator in orange color
    While this indicator illumed, the amplifier is on bridge mode.
11. CH2 volume control
    In bridge mode, this potentiometer invalid, the volume is controlled by CH1 potentiometer.
    In stereo or parallel mode, the potentiometer just controls CH2 volume.
    Gain control range: -80dB~0dB, available turning angle is 280 degree.
12. Stand-by Power Indicator
    While connect the power cable of the equipment, this indicator lights, until the power switch turn to ON, the power ON indicator illumed, then this indicator extinguish.
13. Handles
    Handles are used for easy transportation.

300XL-500XL-900XL rear panel



1500XL-2000XL rear panel



300XL-500XL-900XL-1500XL-2000XL rear panel function introduce

1.CH1 unbalance RCA input

2.CH1 bypass socket

It is parallel connection with Ch1 XLR input, providing output signal save as the input signal.

3.Channel 1 XLR input

This XLR input is the balanced input. It connects to upper audio processors.

4.Input sensitivity switch

This selector is to select the input sensitivity 32dB/26dB

5.Low frequency increase function switch

When turn on this switch, you can obviously feel that the low frequency is saturated and the sound quality is even better.

6.Air exit

This part is the air exit, do not block it.

7.CH1 SPEAKON output

Use this output socket (SPEAKON) to connect the speaker. Stereo mode: 1+ connects to the positive port, 1- connects to the negative port. Bridge mode: 1+ connects to the positive port, 2+ connects to the negative port.

8.Power supply cord(socket)(build-in fuss tube) (1500XL/2000XL NO INTERNAL FUSE)

This fuse holder includes a standard specification fuse inside. It is used to protect amplifier from damages. If the amplifier was connected to power supply but the LED is not illumed, please check the fuse situation. If you found the fuse broken, you must replace with a same specification fuse after troubleshooting.

9.CH2 speakon output

Use this output socket(SPEAKON)to connect the speaker. 1+ connects to the positive port, 1- connects to the negative port. When the amplifier in bridge mode, this port is not used.

10.Operation mode selector

This switch is used to choose the operation mode of the power amplifier.

STEREO mode: Two channels are independently input and output.

PARALLEL mode: One channel independently input (input from Ch1) and two channels independe-ntly output.

BRIDGE mode: One channel input (input from CH1) , output from positive port of CH1 and Ch2.

300XL-500XL-900XL-1500XL-2000XL rear panel function introduce

11.CH2 XLR input
The XLR input is the balanced input, it connects to the upper audio processors.
12.CH2 unbalanced RCA input.
13.CH2 bypass socket
It is parallel connection with XLR input of CH2, providing output signal same as the input signal.
14.Fuss tube socket(（1500XL/2000XL）
Standard fuss tube build in the fuss tube socket and work as protection in over current and trouble. If the amplifier have connected power and power stand-by led is not bright,please check the fuss tube. If you find the fuss have been burnt,you should replace the same standard fuss after troubleshooting.
15.Channel 1 speaker connection pole output （1500XL/2000XL）
Red port connect speaker positive port and black port connect the negative port .Just use the red connection port in bridge mode.
16.Channel 2 speaker connection pole output （1500XL/2000XL）
Red port connect speaker positive port and black port connect the negative port .Just use the red connection port in bridge mode.

Basic operation

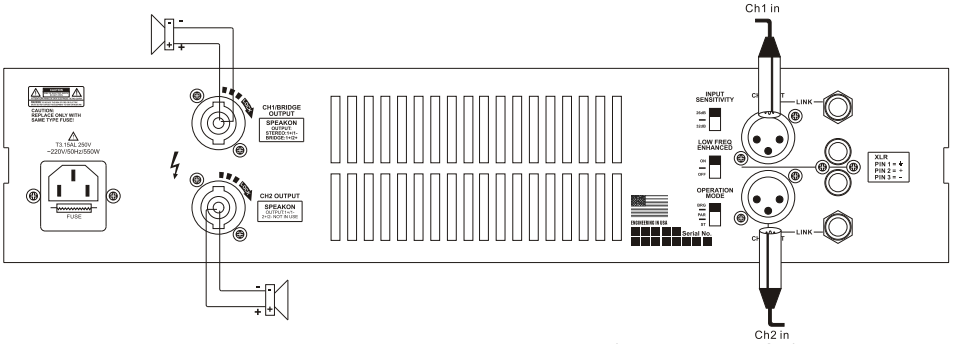
Switch on
1.Connect to the signal source and then connect the plug to the power supply, thus the amplifier inside is electrified and on standby status.
2.Switch on: Press the power switch at " I ", then the amplifier turns on, the stand-by indicator is extinct and the power indicator (ON) is on.
3.When the amplifier is electrified, the protection indicator is on and the amplifier will test automatically for 10 seconds. The indicator will be extinct when test finished. Then you may adjust the volume control button on the panel to set the volume you need.

Switch Off
After using the amplifier, please adjust the CH1/CH2 volume control button to the lowest position(-80dB), then you can turn off the amplifier safely.
Switch Off: Press the power button to "O", then the amplifier turns off, the power indicator (ON) extinguishes and the stand-by indicator lights.

Note:
1.Cannot connect or disconnect the signal source when the amplifier turns on, otherwise there will be impact and which will make damages to the amplifier and the speaker.
2.When the amplifier connects to power supply, it means it has power inside, although the power switch is at the “off” place, the amplifier is still in “standby” working mode. If you do not use the amplifier over 3 hours, you should put off the power cord.

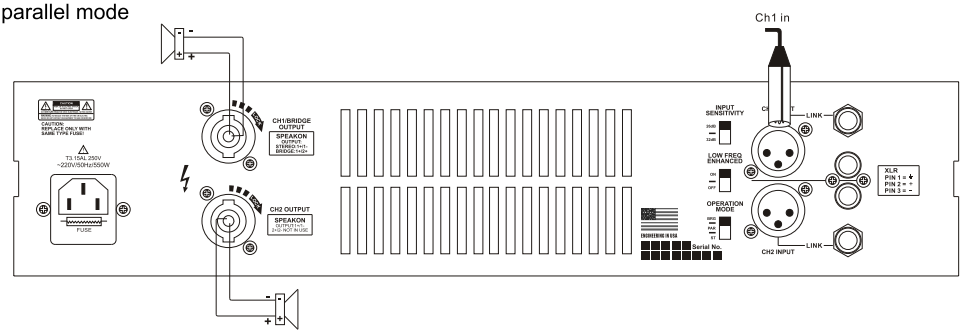
Set up connection mode for 300XL-500XL-900XL

stereo mode



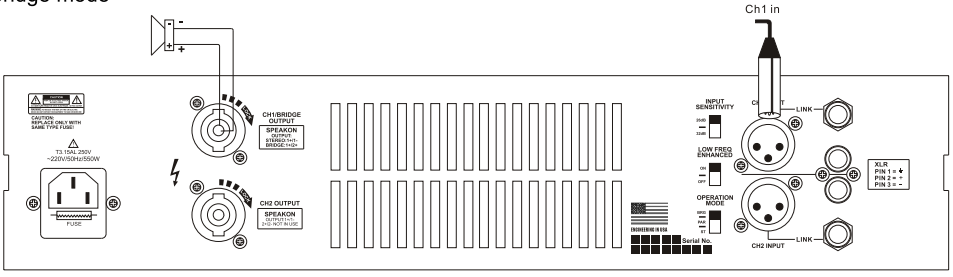
In this mode, connect the two channels input to the sound source (such as mixer, CD) output, set the mode at “STEREO” adjust the two channels volume to a suitable position, connect the two SPEAKON to two speakers.

parallel mode



In this mode, connect the CH1 input to the sound source (such as mixer, CD) output, set the mode at “PARALLEL” adjust the two channels volume to a suitable position, connect the two SPEAKON to two speakers.

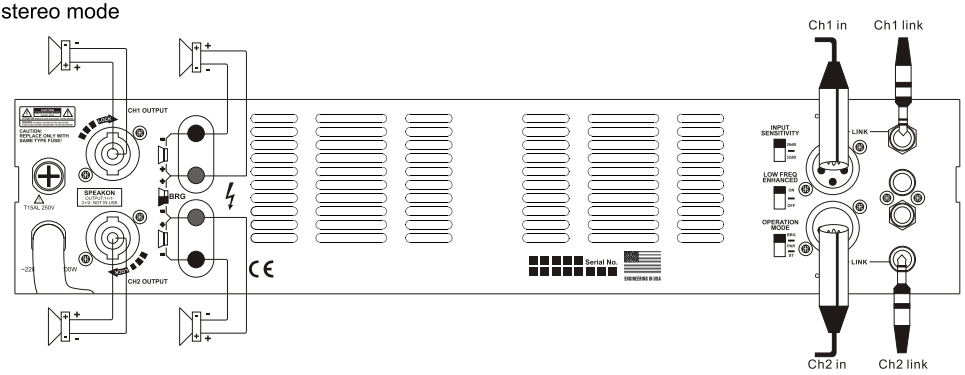
bridge mode



In this mode, connect the CH1 input to the sound source (such as mixer, CD) output, set the mode at “BRIDGE” adjust the CH1 volume to a suitable position, connect the SPEAKON of the BRIDGE OUTPUT to the speaker.

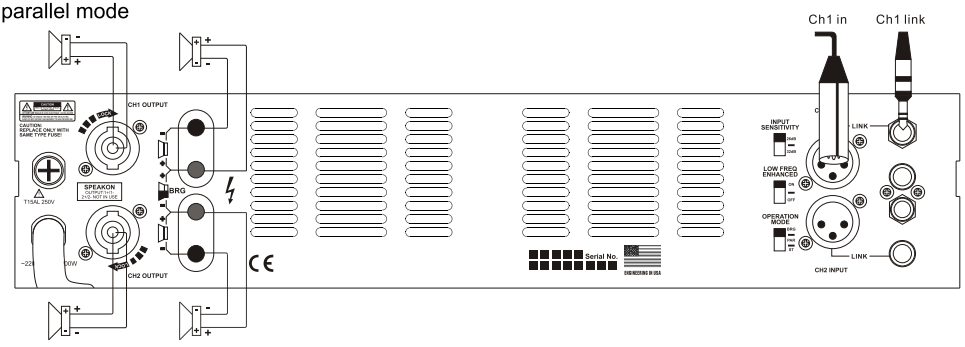
Set up connection mode for 1500XL-2000XL

stereo mode



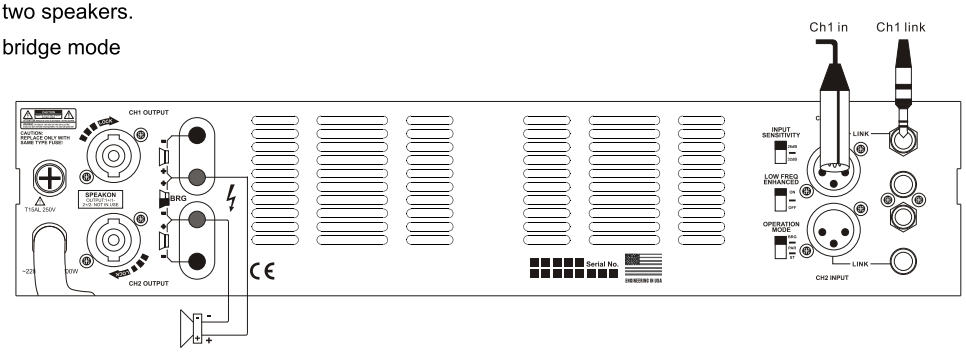
In this mode, connect the two channels input to the sound source (such as mixer, CD) output, set the mode at “STEREO” adjust the two channels volume to a suitable position, connect the two SPEAKON to two speakers.

parallel mode



In this mode, connect the CH1 input to the sound source (such as mixer, CD) output, set the mode at “PARALLEL” adjust the two channels volume to a suitable position, connect the two SPEAKON to two speakers.

bridge mode



In this mode, connect the CH1 input to the sound source (such as mixer, CD) output, set the mode at “BRIDGE” adjust the CH1 volume to a suitable position, connect the SPEAKON of the BRIDGE OUTPUT to the speaker.

Reliability protection function

1. CLIP/Limit
   This function is used for preventing dangerous clip signal damage the speakers, CLIP/Limit monitors the distortion produced by amplifier output, when distortion exceeds 0.5%, CLIP/Limit will reduce the input signal to ensure signal not distortion (CLIP).
   Note: If input signal already has CLIP or exceeds linearity working range of input circuit, then the CLIP/Limit is not valid!
2. Over-heat protection
   If the amplifier works at full loading for a long time, the fans have reached the highest speed. If this status continue and the temperature rise up to over 105 degree, the amplifier will go into over-heat protection status and the protection indicator (PROT) on the front panel lights on, and no output. Therefore, the users are suggested to correctly operate the amplifier, the loading is not lower than 2 ohm, and maintain the airflow good and free. The status of no power output because of over-heat protection usually won't happen if the environment temperature not higher than 30 degree.
3. VHF protection
   If the amplifier output reaches a certain range and frequency exceeds 10KHz, such as MIC feedback noise, then amplifier may go into VHF protection after 3 seconds, the protection indicator (PROT) on the front panel will be on and the speakers do not have sound, but will recover automatically after protection circuit startup for 10 seconds. If the output signal does not change, it will keep on VHF protection.
4. Short circuit protection
   All the series amplifier of our company has short circuit protection. This protection make the output transistors work at safe range. When output is in short circuit, the protection indicator (PROT) on the front panel will be on and the amplifier has no output. The equipment will be recovered after 10 seconds after terms of short circuit removed.
5. AC local power protection
   If the AC power voltage lower than the allowed working voltage （~160V）, the power supply will be turned off automatically until the power voltage is normal.
6. DC protection
   If the output signal has large DC voltage (=2.6V), in order to protect the speaker, the DC protection circuit will be startup, the protection indicator (PROT) on the front panel will be on and the amplifier has no output.

Application range

1. This user manual is suitable for XL series models amplifier that manufactured and launched by SAECHINA.
2. Suits for live concert, disco, night Club, etc.

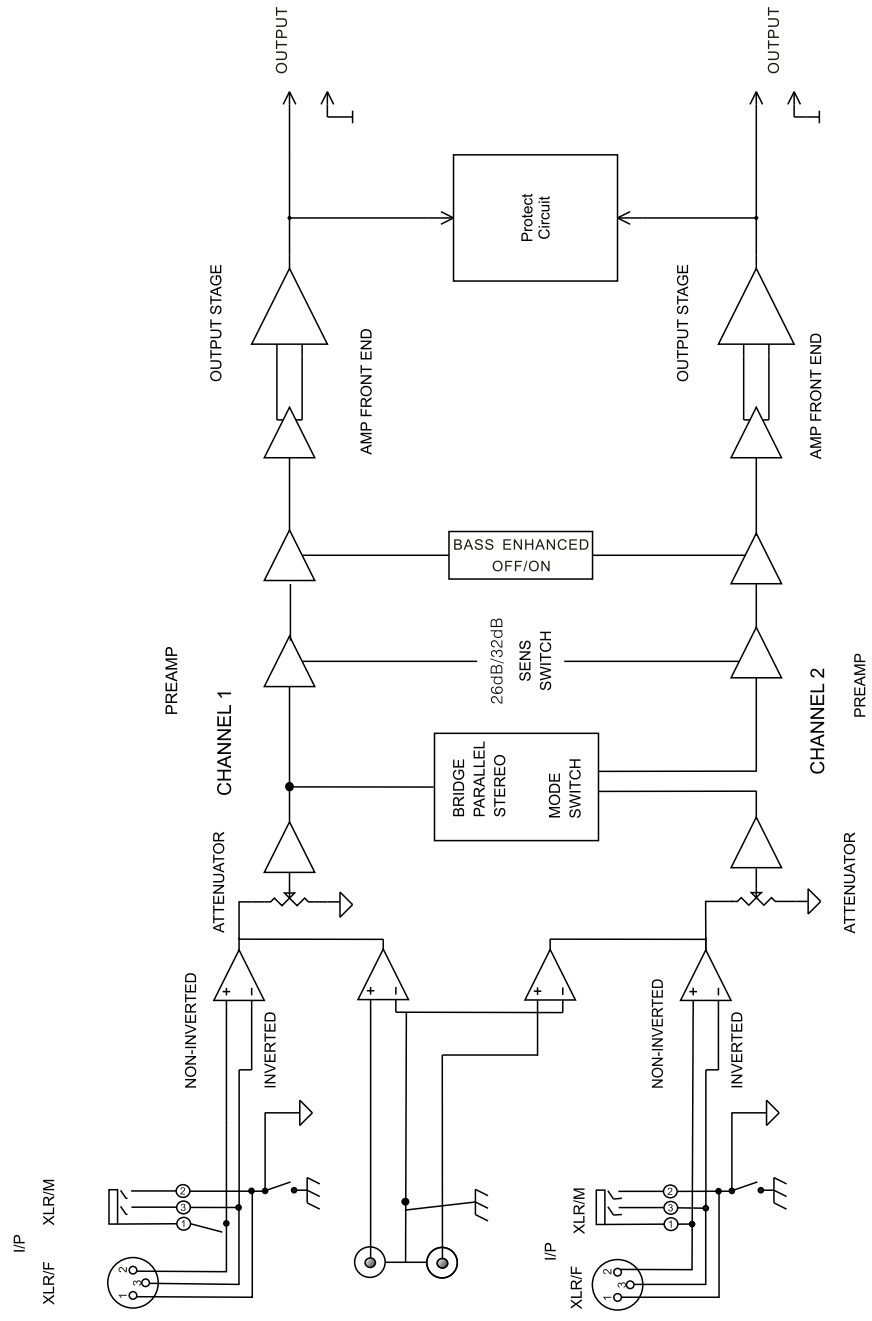
Maintenance and troubleshooting

Below are some simple methods to check the amplifier was damaged or not:

1. No output
   If the signal LED is illumed based on the signal, then the amplifier shall be fine, please check whether the SPEAKON output is well connected or not.
2. Low signal output
   If the signal LED is illumed and clip LED also lit, then please check whether the output port is short-circuit or not. If the signal LED is illumed, and the protect LED is also lit, then the amplifier shall be at protection status. There are two possibilities: one maybe over-heat protection, another maybe VHF protection. Cancel the signal, then you can test whether it is VHF protection or not. If the amplifier chassis temperature is very high, that shall be over-heat protection. If the input voltage is too low, it may lead to lack of voltage protection, the lowest AC voltage is 160V.
3. The failure is still existing after check the above, please return the equipment to the authorized service agent, it shall be repaired by skilled person.

Note: If the amplifier is still in guarantee period, please keep the case completely well, cannot disconnect any mechanical parts, otherwise it will not be guaranteed!

Schematic illustration



Specifications

Model	Tolerance	300XL	500XL	900XL	1500XL	2000XL
8ohm stereo power*	-2.5%,10%	110WX2	200WX2	310WX2	450WX2	600WX2
4ohm stereo power*	-2.5%,10%	170WX2	300WX2	500WX2	750WX2	1000WX2
2ohm stereo power**	---	---	450W x2	600WX2	1000WX2	1250W X2
8ohm bridge power*	-2.5%,10%	360W	600W	1000W	1500W	2000W
4ohm bridge power**	---	---	600W	1200W	2000W	2600W
Frequency response	+0/-0. 5dB	20Hz-20KHz@8Ω +0dB/-0.5dB				
THD+N	±0.01%	＜0.05%	＜0.05%	<0.05%	<0.05%	<0.05%
Slew Rate	±2V/μs	>20V/μs	20V/μs	20V//μs	20V/μs	20V/μs
Damping Factor	+30/-10	>150	>150	>200	>200	>200
Dynamic Range	±5dB	⩾80dB	⩾80dB	⩾80dB	⩾80dB	⩾80dB
S/N rate	±5dB	⩾85dB	⩾85dB	⩾90dB	⩾90dB	⩾90dB
Crosstalk	±5dB	⩾65dB	⩾65dB	⩾70dB	⩾70dB	⩾70dB
Input Sensitivity	±0.5dB	26dB/32dB 1.48V/0.75V	26dB /32dB 2.2V/1.05V	26dB/32dB 2.48V/1.244V	26dB/32dB 3.1V/1.55V	26dB/32dB 3.46V/1.73V
Voltage Gain	±0.5dB	26dB/32dB	26dB /32dB	38dB	26dB/32dB	26dB/32dB
Input Impedance	---	Balance20K Unbalance10K	Balance20K Unbalance10K	Balance20K Unbalance10K	Balance20K Unbalance10K	Balance20K Unbalance10K
Output Impedance	---	⩾2Ω	⩾2Ω	⩾2Ω	⩾2Ω	⩾2Ω
Output Circuitry	---	Class AB	Class AB	Class AB	Class 2H	Class 2H
Total Efficiency	±5%	65%	62%	⩾65%	⩾68%	⩾68%
G.W.（kg）	±0.5	6KG	6KG	8.75KG	11KG	11.10KG
Packing Dimensions(cm)	±0.5	58.5x45x16		58.5x50x16		

Note:*,The power are tested under EIA standard.
**,The power are tested under the condition of 1KHz,THD1%,40ms burst.
※The above result was tested under the term of standard power wave and constant voltage.

EAST
PROFESSIONAL PRODUCTS

Implementation standard of product/产品执行标准：Q/SAE-1-2005

SAE
ADD/

Part No.:

02003-0010384000

sion No.: VN2