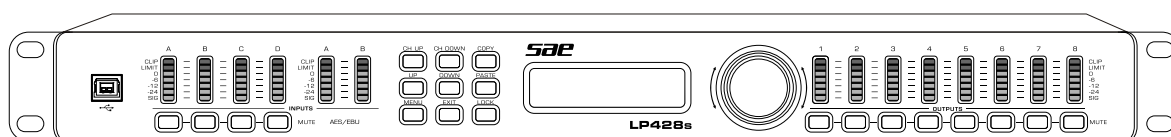




User's Manual
用户使用手册

LP428s Loudspeaker Processor User's Manual

LP428s 音箱处理器 使用说明书



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重要安全事项和符号说明

- 1. 阅读这些规定。
- 2. 保存好这本说明书。
- 3. 注意所有警告。
- 4. 遵守这些规定。
- 5. 警告:为避免着火或电击，不要将设备暴露在雨中或潮湿的环境中。设备不应遭受水滴或水溅，而且设备上不应放置诸如花瓶一类的装满液体的物品。
- 6. 建议用干布清洁。
- 7. 根据制造商的说明进行安装。
- 8. 不要安装在会产生热量的热源附近，如散热器、热调节装置、炉子或其它设备。
- 9. 勿使接地插头的安全性失效，本设备应通过保护性接地连接到插座。
- 10. 保护电线防止被踩踏或挤压，尤其要注意插头、电源插座及其连接设备处。
- 11. 必须选择好后板开关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。



有重要的信息，提请注意！

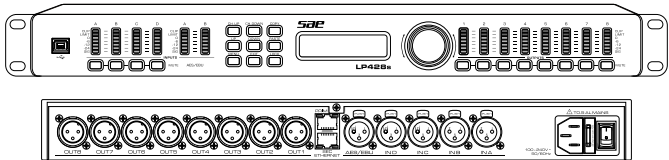


机内具有危险电压的非绝缘部分，足以致人于触电之危。
维修时必须由专业人士检修，不得擅自开盖！

前言

欢迎

非常感谢您购买蜚声演出器材制造有限公司产品。
在使用之前请详细阅读本手册，它将给您正确的使用指引，并有助于设备的正常工作，避免因操作不当而造成不必要的异常问题。



拆包

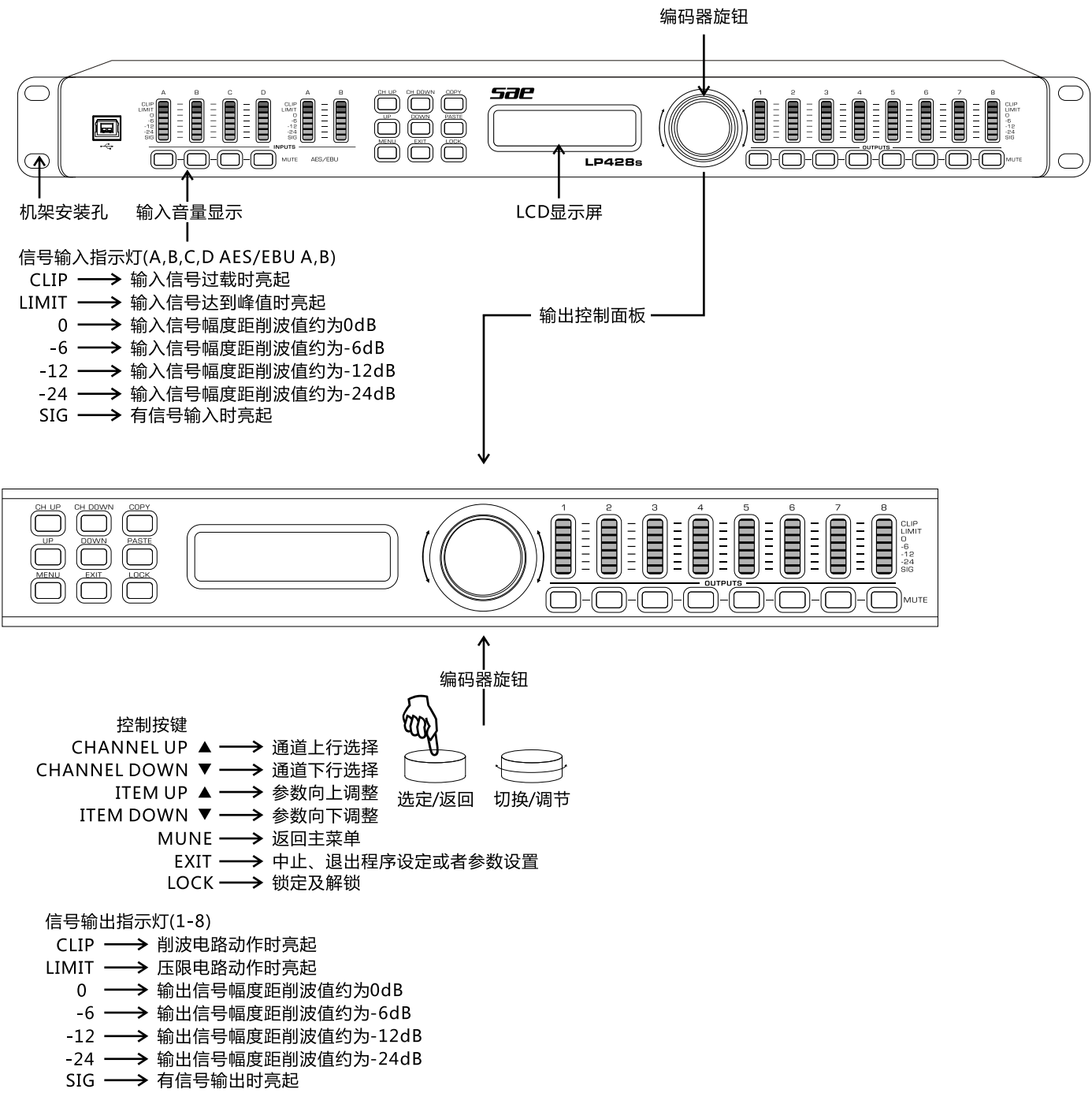
请在拆开包装后，确认产品的外观没有在运输途中遭到损坏。确认预设电压和您所在地的交流电压额定值匹配（详细信息见产品背板印刷）建议您保留包装箱，以便在需要退还时使用。

重要的安全注意事项

蜚声演出器材制造有限公司的产品设计已经考虑到安全使用的要求，并遵照相关的国家的安全规定检验出厂产品，只有合格的产品才能出厂销售。但由于本产品内部有危险高压和电量，因此要求用户必须认真阅读本手册的注意事项。如果产品跌落、凹入、浸湿或者里面有部件松动，则会大大增加人被电击的危险。当发生以上的问题时，请马上切断电源线，然后将本产品送还指定的经销商进行维修，禁止自己开盖检查！

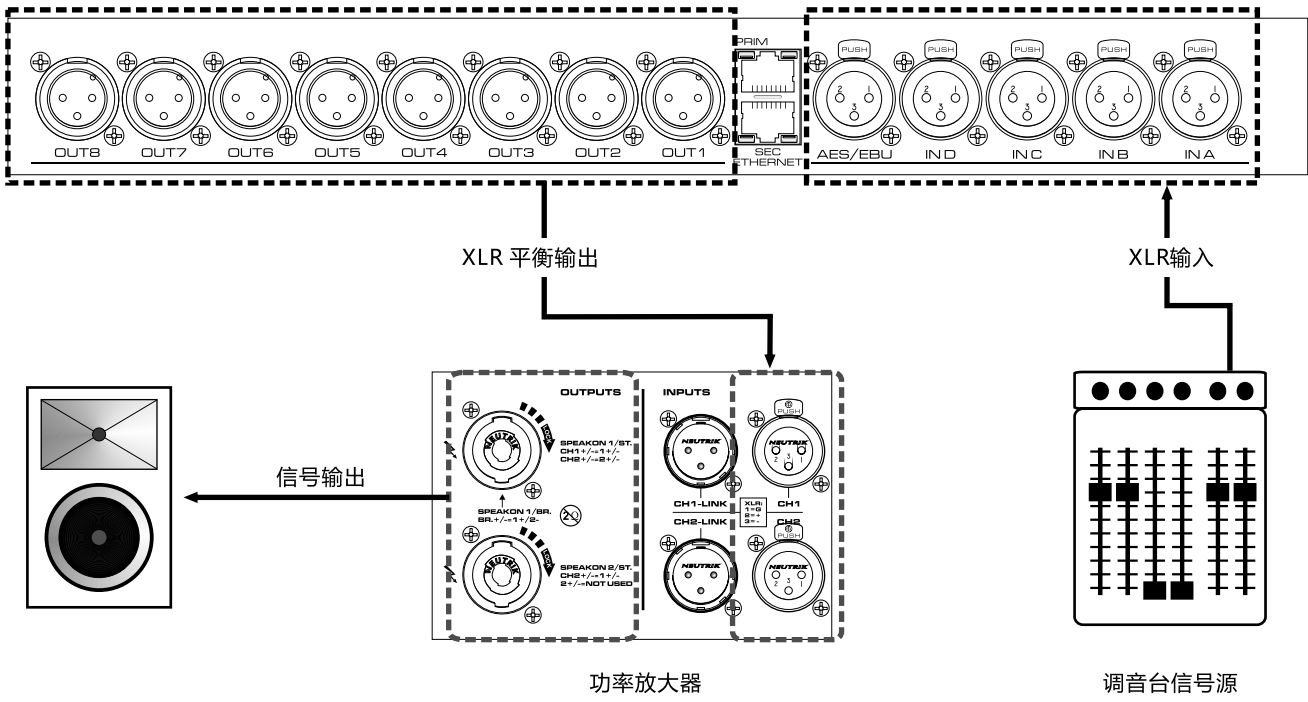
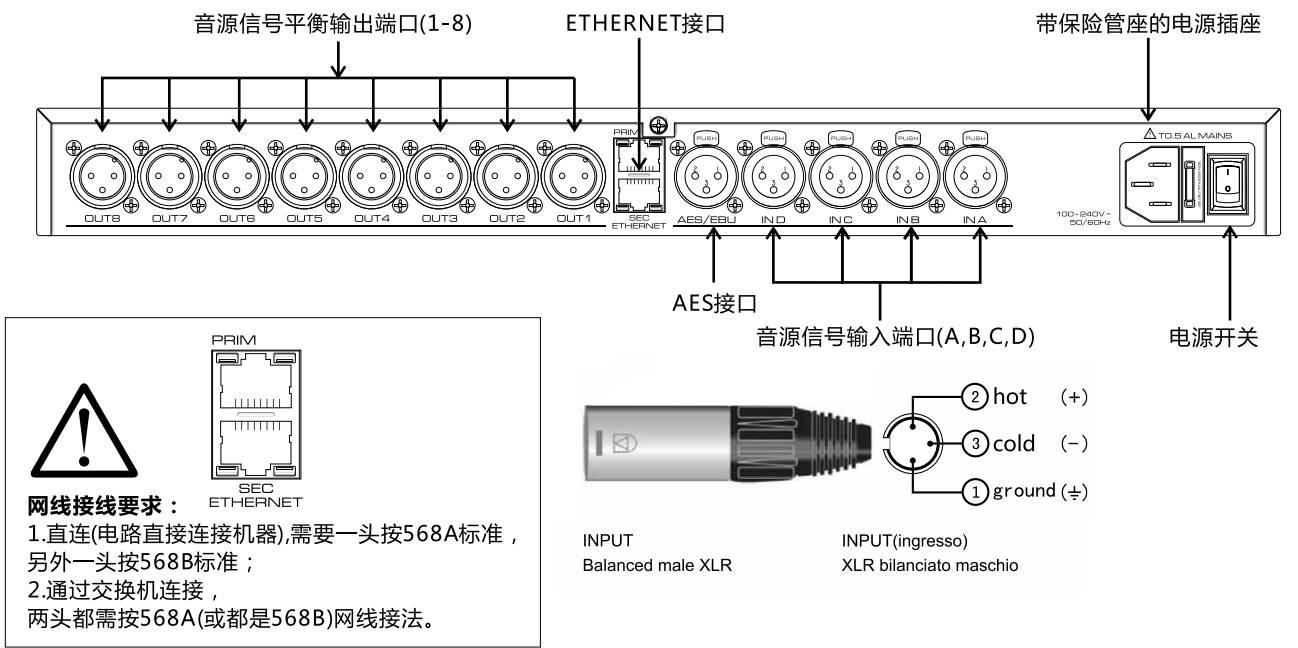
面板说明

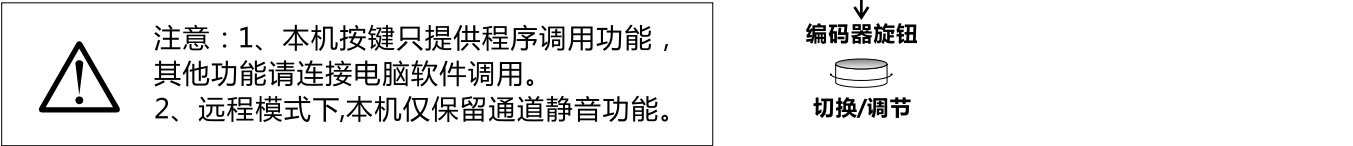
前面板概况



后板说明

后面板概况



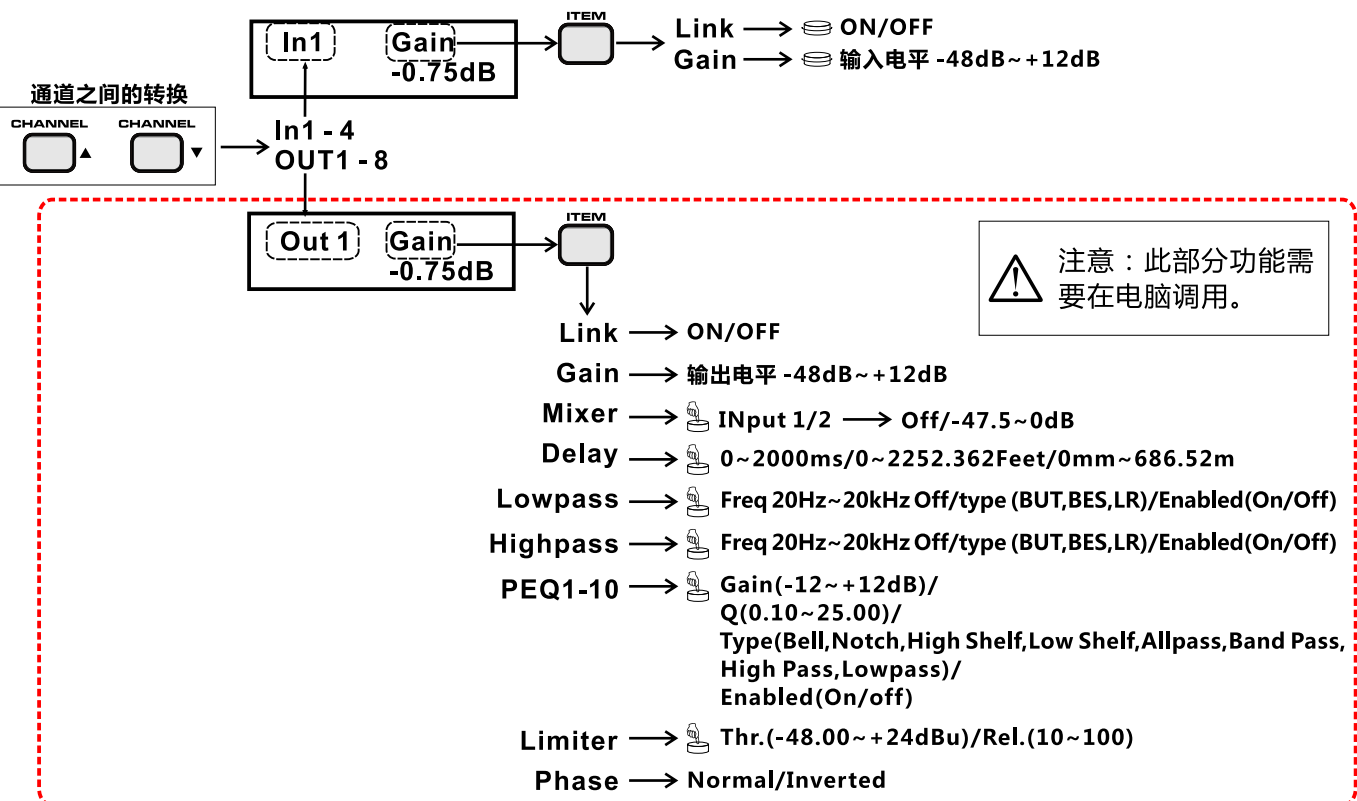
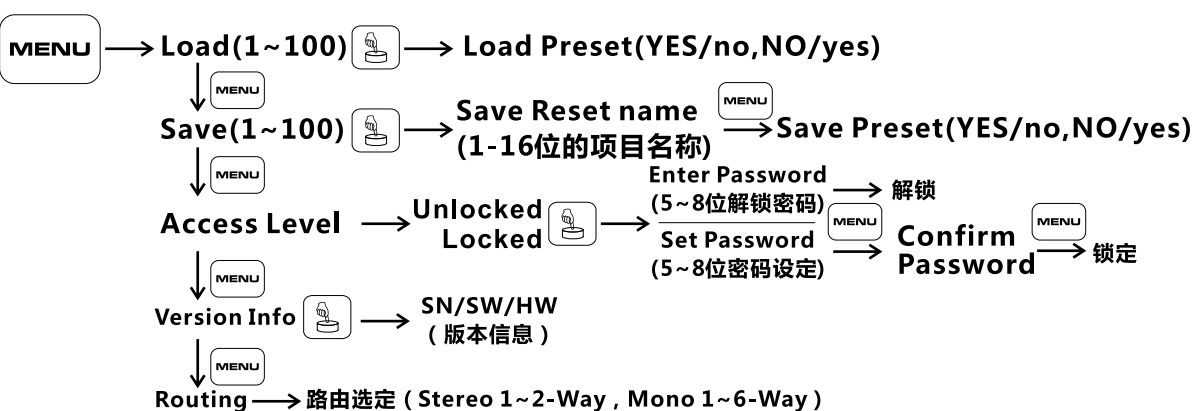


编码器旋钮



切换/调节

设定流程图(见下图), 仅供参考



软件使用说明

软件界面介绍

1.设备状态控制面板



2.设备调节控制面板



软件使用说明

软件界面介绍

2.设备调节控制面板

相位开关
高通设置
(20-20kHz)
低通设置
(20-20kHz)
增益(0.01-12dB)
延时(0.001-5ms)

同步开关
静音开关
相位开关

音源混合选择

启用该段均衡的设置或关闭

1) Bell:钟型滤波器
2) Notch:陷波器
3) Hi-shelf:高端带型滤波器
4) Lo-shelf:低端带型滤波器
5) All Pass:全通滤波器

USB驱动程序安装向导

安装向导

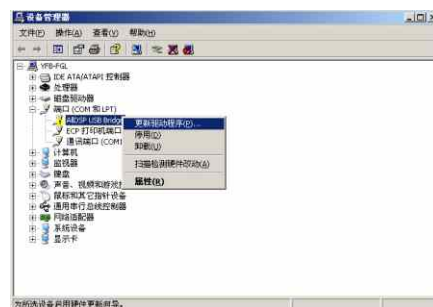
1.当安装好PC软件后，LP428设备连接到电脑，如电脑不会自动发现设备硬件，在设备管理器里右键点【扫描检测硬件改动】

如右图



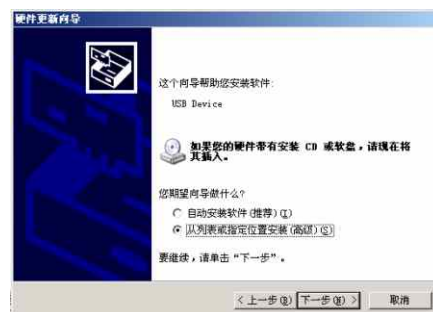
2.此时会扫描到感叹号或问号的USB硬件设备，在此项右键，点【更新驱动程序】。

如右图



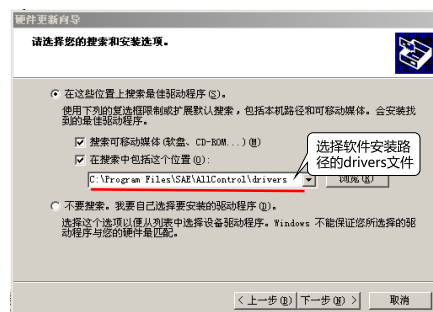
3.弹出硬件更新向导,如点【自动安装软件】找不到文件安装时,可点第二项【从列表或指定位置安装】按下一步。

如右图



4.在弹出的窗口里的【在搜索中包括这个位置】项打勾，并在浏览框选里选择到软件安装路径的驱动程序文件（图片为软件默认安装的路径，如安装时有改动路径则要选到自己安装的路径），下一步，即会自动搜索安装。如还是搜索不到文件安装，可点【不要搜索】项,按下一步，选择DSP，再下一步进行安装。

如右图



5.在完成驱动程序安装后，设备管理器里会自动识别到设备，此时就可以连接设备了。

如右图



技术指标

型号	LP428s
输入	四路平衡式.
输出	八路平衡式.
输入阻抗	平衡式 20K 非平衡式10K
输出阻抗	≤ 100Ω
输出增益	+12dB 至 -48dB 可调，调整步距为 0.25dB.
输入增益	+12dB 至 -48dB 可调，调整步距为 0.25dB.
其他参数	
频率响应(-1dB)	20Hz - 20kHz
总谐波失真	≤ 0.008%
最大输入延时时间	2s
最大输出延时时间	50ms
动态范围 (A计权)	≥115dB
转换频率 (高通/低通)	20Hz - 20kHz，调整步距1Hz
中心频率 (高通/低通)	20Hz - 20kHz，调整步距为 1/36 倍频程 (19980 个位置)
最小负载阻抗	600Ω
最大输出电平	+18dBu (600Ω负载)
滤波器增益	+12dB 至 -12dB，步距为 0.25dB
高通及低通滤波器	Q 值 0.2-25可调 步距 0.1可调/10 段 / 每路输出有 1 个滤波器,开启同关闭
FIR滤波器	8 x 800taps
频率响应	贝塞尔 / 巴特沃斯 6/12/18/24dB 每倍频程，林克维茨 - 瑞莱 24dB / 倍频程
保护功能	系统可设置密码，可以防止无关人员的操作
连接器	
输入部分	3 芯 XLR 母插座.
输出部分	3 芯 XLR 公插座.
USB 接口	方形
电源插口	3 芯 IEC 插座.
输入(Limiter)压限	门槛值 +24dBu 至 -48dBu.
输出(Limiter)压限	门槛值 +12dBu 至 -48dBu.
启动时间	0
释放时间	1-100倍
采样率	96kHz
相位	180°相位
显示屏	2 x 16 字符型液晶屏.
输入电平表	2 x 7 点，-30dB 至数字剪峰
输出电平表	6 x 7 点，-30dB 至数字剪峰
预设置	大于100个电脑预设置/大于100个本机预设置
版本信息	硬件,软件,DSP模块的版本信息
尺寸/电源线	
产品外形尺寸(mm)	482x231x44.5 (1U)
外包装尺寸 (mm)	525x300x110 (1U)
消耗功率	≤10W
电源	6.5A电源线 100-240V ~/50-60Hz ±10%

保修条例

免责声明

蜚声演出器材制造有限公司对于因不当使用本产品而导致扬声器或其它设备损坏不承担任何责任！蜚声演出器材制造有限公司对本产品提供2年有限质量保证。蜚声演出器材制造有限公司保证其产品自销售之日起2年内不会发生材料和制造工艺缺陷；若在正常安装和使用条件下发生的损坏，蜚声演出器材制造有限公司将按照质保协议无偿更换有缺陷的零件和维修故障产品。但客户必须将产品送回我们的工厂或授权的维修点或指定经销商处，同时必须预付运费和附带购买证明（产品保修卡客户联及销售收据或发票复印件）。

此质保协议规定，退回的产品必须经过我们检查判断存在质量缺陷。本质保不适用于任何误用、疏忽、意外、不正确安装而导致损坏的产品或日期编码、序列号被去掉或破损致不能辨认的产品。蜚声演出器材制造有限公司不对意外或间接发生的损害承担责任。此质保赋予您特定的法律权利。

通讯地址：
蜚声演出器材制造有限公司售后服务部
中华人民共和国，广东省，佛山市，南海区，和顺，文教路东段39号，蜚声工业园。

邮政编码： 528241	电话： 0757-8560-8331	传真： 0757-8568-8191
电子邮件： support@saechina.com	品牌网址： www.saeaudio.com	制造商网址： www.saeaudio.com

产品物质拆分表

为满足中国《电子信息产品污染控制管理办法》（信息产业部第39号令）的相关规定和要求，现对产品中有害物质，按部件分类，声明如下：

部件名称	有毒有害物质或元素					
	铅（Pb）	汞（Hg）	镉（Cd）	六价铬（Cr(VI)）	多溴联苯（PBB）	多溴二苯醚（PBED）
机箱	×	○	○	○	○	○
主板模块	×	○	○	○	×	×
电源模块	×	○	○	○	×	×
I/O板模块	×	○	○	○	×	×
控制模块	×	○	○	○	×	×
灯板	×	○	○	○	×	×
备注： ○：表示该有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006规定的限量要求下 ×：表示该有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006规定的限量要求。						

在中华人民共和国境内销售的电子信息产品上将贴上有“环保使用期限”（EPuP）符号。
圆圈中的数字代表产品的正常环保使用年限。



Important Safety Instruction and symbol description

1. Read these rules.
2. Keep this instruction manual.
3. Pay attention to all the warning.
4. Follow these provisions.
5. Warning: do not place the device in rain or wet environment, to avoid catching fire or electric shock.
6. Only dry rag can be used to clean.
7. Do not block the air-vent. The installation should be according to manufacturer's instruction.
8. Do not install near the heat source which such as radiators, stoves and others (include amplifiers) can produce heat.
9. Do not disable the security of the ground pin. This device should be linked to socket through safe ground connection.
10. Take care of the electric wire without trampling and squeezing, Especially pay attention to the plug, the power sockets and other connectors.
11. The voltage which indicated on the rear panel must be used. If the device damage is caused by using improper voltage, it will be repaired out of warranty.



When you see this sign, it means these are important information.

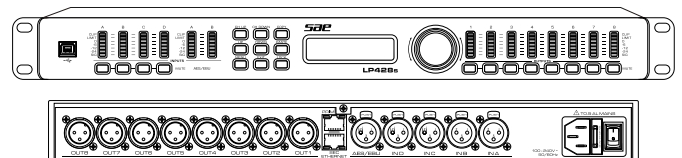


Dangerous without insulated sections are in the device, which can electrify people. So do not open the cover. The device must be repaired by professionals or returns to the manufacturer.

Foreword

Welcome

LP428 is a newly developed professional speaker management from our company. And it can work with computer. Please download the control software from our company brand website. balanced input, and Matching impedance output. Please read this manual carefully.



Unpacking

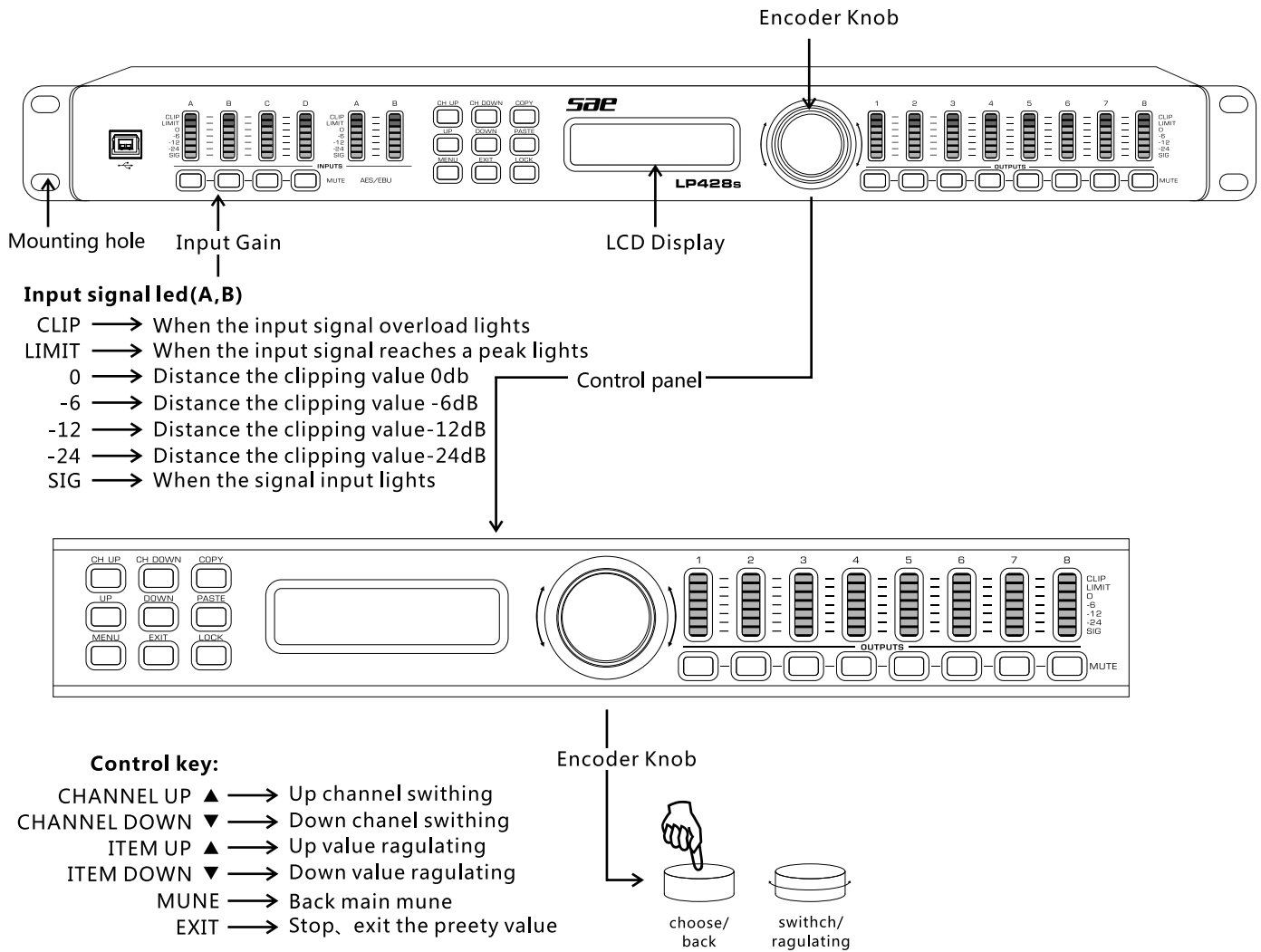
Please make sure if the appearance of the power amplifier was damaged or not during the transportation after you opened the package. Please make sure the preset voltage is matched with your local AC voltage (please check it on the rear panel of the power amplifier). We suggest you retain the package in case you need them for further transportation.

Important safety precautions

The design of SAE products has already taken the safe requirement into consideration and all the finished products have been tested under the requirement of the government before sale. Users should read the notice in this manual before operation as there is dangerous high voltage and electricity inside the products. It will increase the chance of getting shock by the electricity if the product falls down, recess in the appearance, soaked or there were some parts loose internal. If there are problems above, please turn off power immediately and send the defective units to local distributor for service.

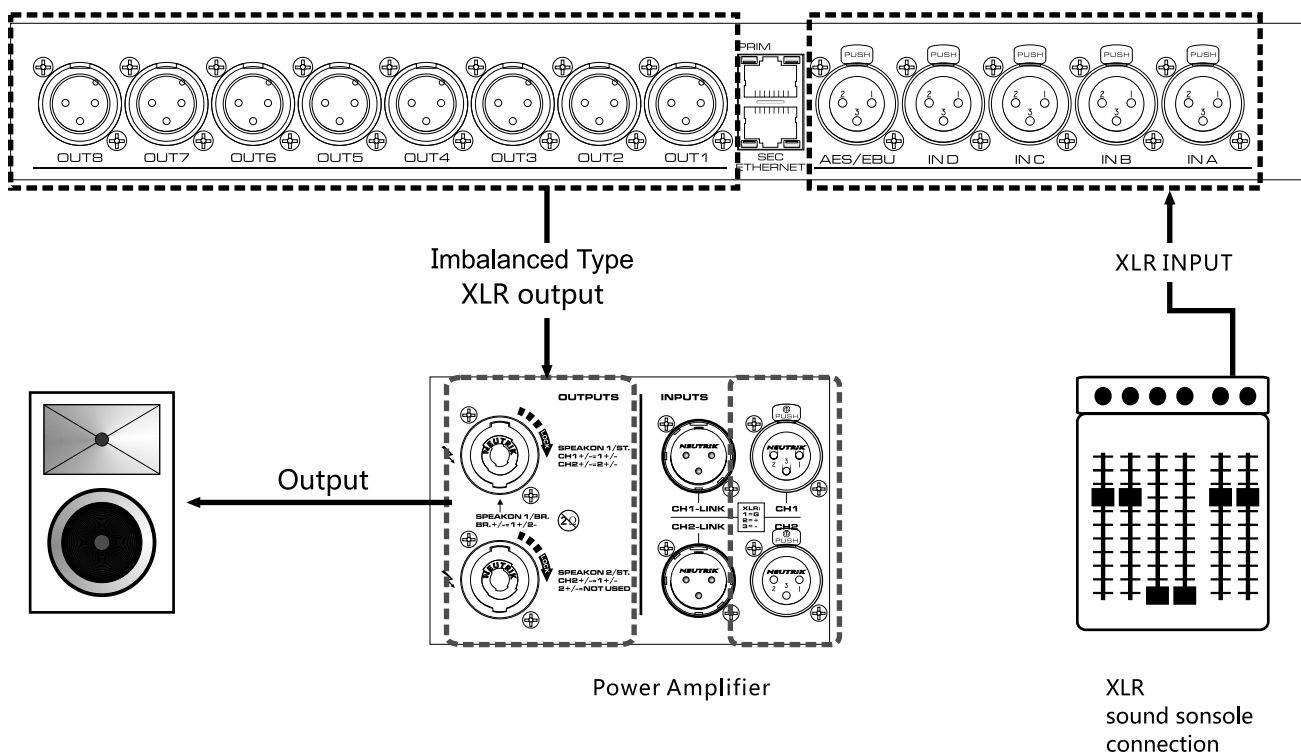
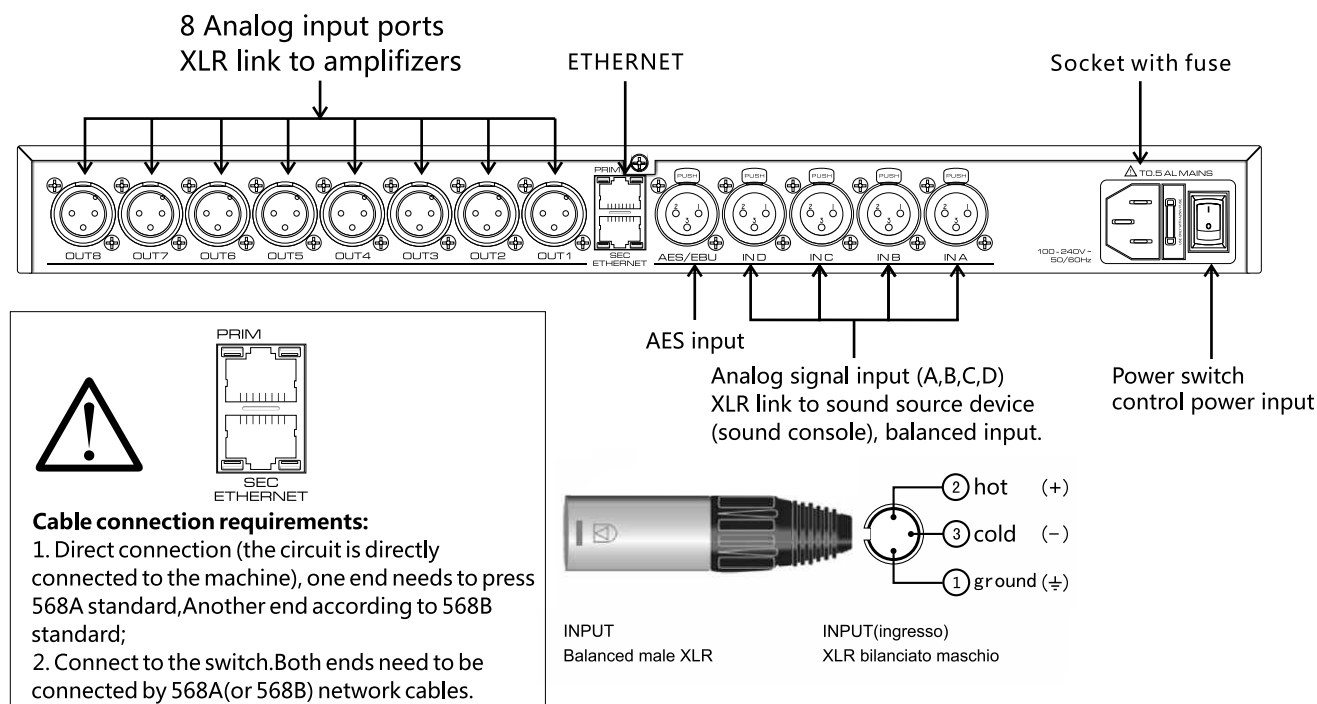
Front Panel Function

Front panel

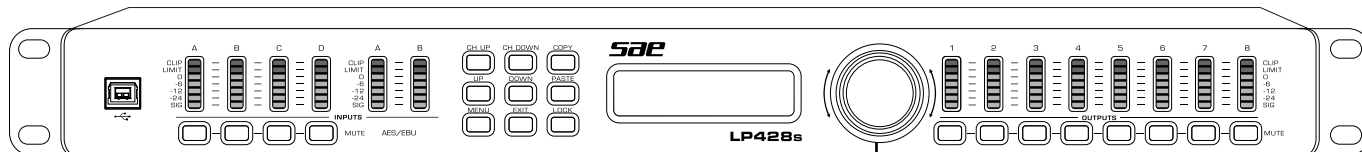


Rear Panel Function

Rear Panel



DSP instructions



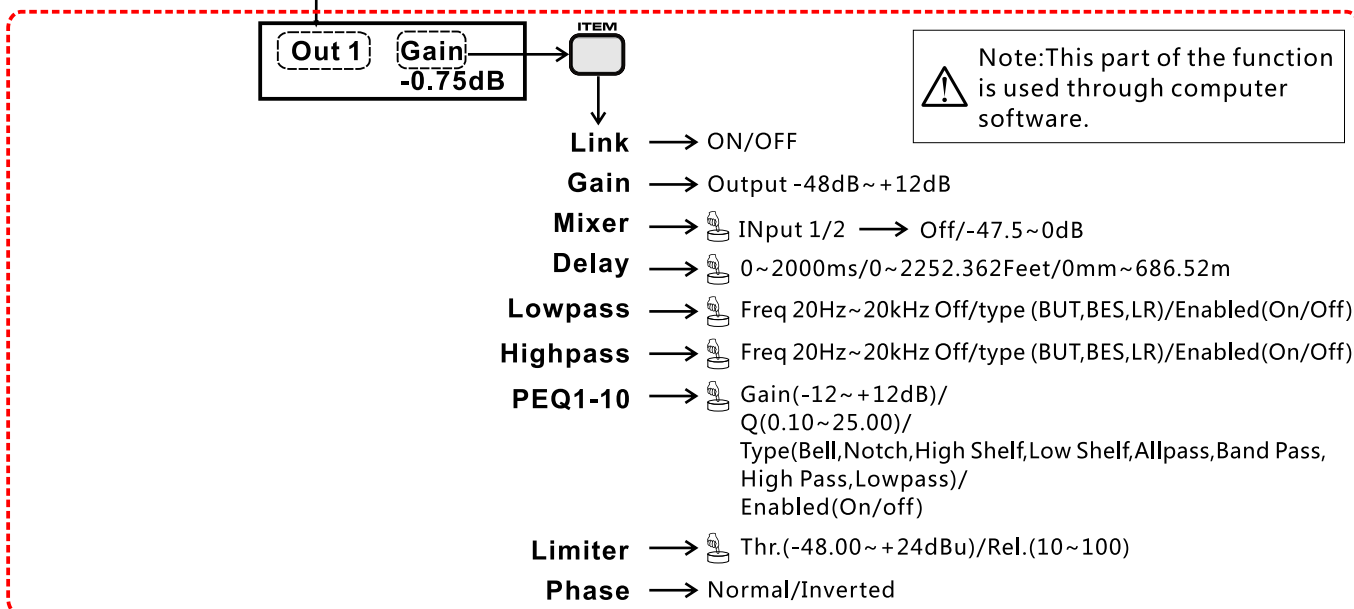
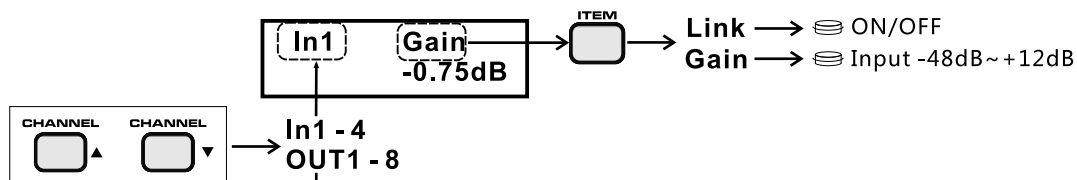
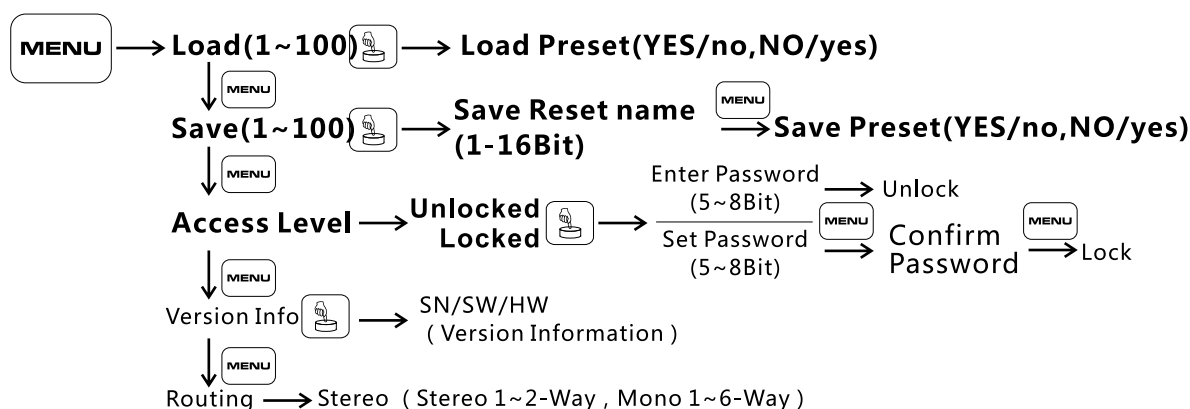
Note: The local buttons only select Preset, Please connect to the computer software use of other functions.

Encoder knob with key function
choose parameters magnitude



Switching / regulating

Set up flow chart (see figure below) ,for reference only



Note:This part of the function
is used through computer
software.

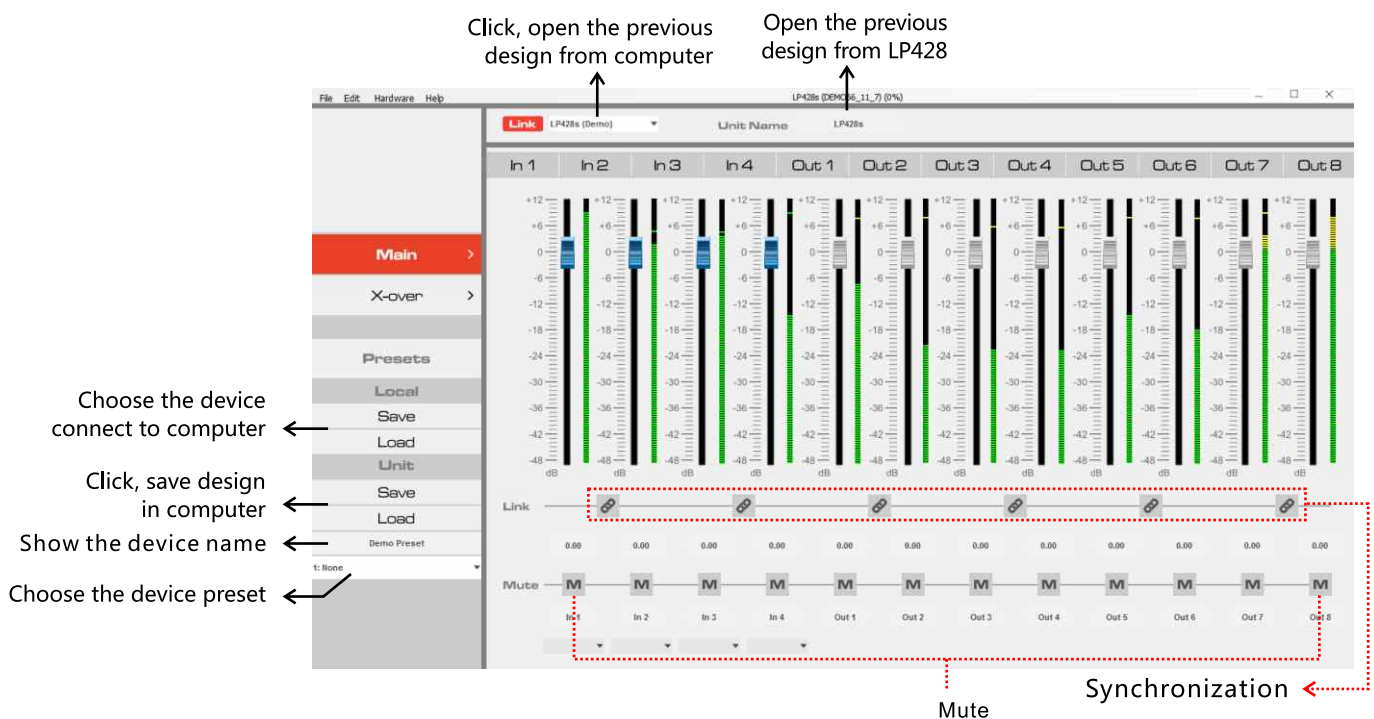
Software instructions

Software interface introduction

1. Equipment state control panel



2. Main interface



Software instructions

Software interface introduction

2.X-OVER interface

The screenshot shows the 'X-over' interface of the LP428s software. The left sidebar contains a menu with 'Main', 'X-over' (selected), 'Presets', 'Local', 'Save', 'Load', 'Unit', 'Save', 'Load', and 'Demo Preset'. The main area displays a frequency response graph for 'Out 1' to 'Out 8'. Below the graph, there are controls for 'HPF' (High Pass Filter) and 'LPF' (Low Pass Filter) for each output, with buttons for 'But 6dB', 'But 12dB', and 'But 6dB'. A red dashed box highlights the 'HPF' and 'LPF' sections. To the right of the graph, there are 'Gain' and 'Delay' controls for each output, with a red dashed box highlighting the 'Gain' and 'Delay' sections. On the far right, there are 'Synchronization' (Link), 'Mute' (M), and 'Phase Invert' (P) controls for each output, with a red dashed box highlighting the 'Mute' and 'Phase Invert' sections. Annotations on the left side point to the 'HPF' and 'LPF' sections, stating 'Phase HI-PASS (20-20kHz)' and 'LOW-PASS (20-20kHz)'. Annotations on the right side point to the 'Synchronization', 'Mute', and 'Phase Invert' sections, stating 'Synchronization', 'Mute', and 'Phase'.

Phase
HI-PASS
(20-20kHz)
LOW-PASS
(20-20kHz)

Gain(0.01-12dB)
Delay(0.001-5ms)

Synchronization
Mute
Phase

3.OUTPUT interface

The screenshot shows the 'OUTPUT' interface of the LP428s software. The left sidebar contains a menu with 'Main', 'X-over', 'Presets', 'Local', 'Save', 'Load', 'Unit', 'Save', 'Load', and 'Demo Preset'. The main area displays a frequency response graph for 'Out 1' to 'Out 8'. Below the graph, there are 'Router' controls for each output, with a red dashed box highlighting the 'Router' section. To the right of the graph, there are 'Gain', 'Delay', and 'Limiter' controls for each output, with a red dashed box highlighting the 'Gain', 'Delay', and 'Limiter' sections. Annotations on the left side point to the 'Router' section, stating 'Router choose sound source'. Annotations on the right side point to the 'Gain', 'Delay', and 'Limiter' sections, stating 'Start the equalization of the band or close.'.

Router choose sound source

Start the equalization of the band or close.

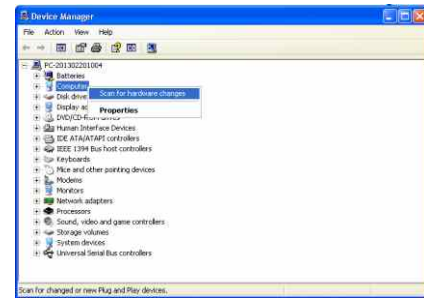
Filter Type :

- 1) Bell: bell filter secam
- 2) Notch: wave trap
- 3) Hi-shelf: high-end broom-shaped filter
- 4) Lo-shelf: low-end broom-shaped filter
- 5) All Pass: all pass filter

USB driver manual installation

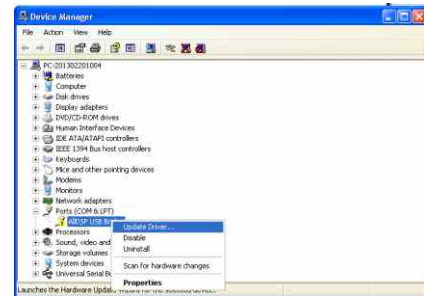
1. After setting up the PC software, connect LP428 with computer, if the computer can not recognize automatically, please right-click **Computer** in the **Device Manager**, and click **Scan for hardware change**

as the right picture



2. As Pic 2 shows, exclamation mark or question mark appear. Right click the mark, click **Update Driver**

as the right picture



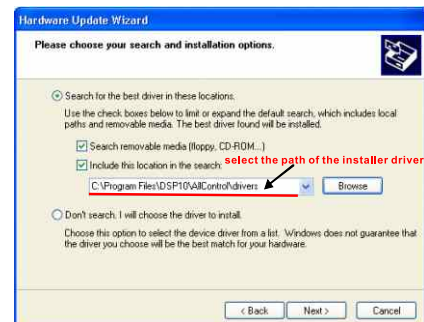
3. Hardware update wizard appears, if click **Install the software automatically**, can not install, then click **Install from a list or specific location**, and then click Next to continue.

as the right picture



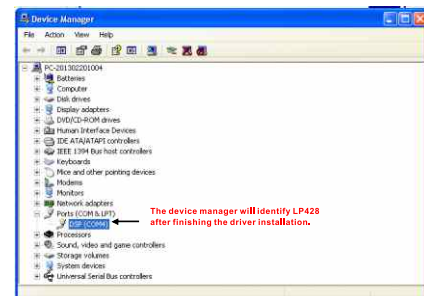
4. Tick the option **Include this location in the search** and select the path of the installer drivers in the blank. (You should select your own path if you change the default path of the installer.) And then Click **Next** to continue, if still can not search the file to install, you can click **Don't search**, choose DSP and continue to install.

as the right picture



5. The device manager will identify LP428 after finishing the driver installation. Now, the device can be connected.

as the right picture

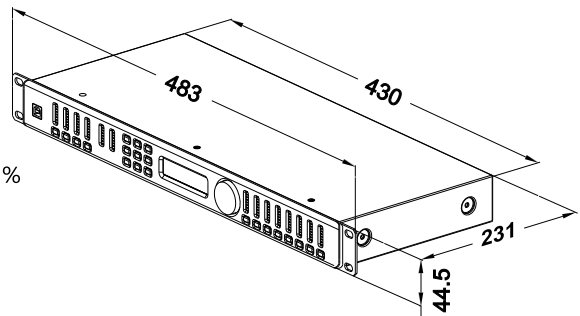


Remind:

Because the languages of Windows XP are different, the menu translation maybe is not the same in English system. However, the shortcut keys are similar, so please refer to them to help you.

Specifications

Model	LP428s
Input	4 ways Balanced Type.
Output	8 ways Imbalanced Type
Input Impedance	bal 20k / unbal 10k
Output Impedance	≤ 100 ohms.
Output Gain	From +12dB to -48dB, 0.25dB increment
Input Gain	From +12dB to -48dB , 0.25dB increment
Other Parameters	
Frequency Response (-0.3dB)	20Hz - 20kHz
THD+N	≤0.003%
Maximum input delay	2s
Maximum output delay	50ms
Dynamic Range(A weighting)	≥115dB
Converts Frequency (high pass/ low pass)	20Hz - 20kHz, 1Hz increment
Centre Frequency (high pass/ low pass)	20Hz - 20kHz, 1/36 octave (19980 positions) increment
Minimum Load Impedance	600 ohms
Maximum Output Level	+18dBu (600 ohms load)
Filter Gain	From +12dB to -12dB, 0.25dB increment
High Pass & Low Pass Filter	Q value 0.2-25 adjustable, 0.1 increment/ 10 bands/1 filter each output channel, open and close
FIR Filter	8 x 800taps
Frequency Response	Bessel/ Butterworth 6/12/18/24dB each octave, and Linkwitz-Riley 24dB/ octave
Protect Function	system can be set code which can prevent unauthorized person operation.
Connectors	
Input Section	3 cores XLR F socket
Output Section	3 cores XLR M socket
USB Connector	Square
Power Socket	3 cores ICE socket
Input Limiter	Threshold +24dBu to -48dBu
Output Limiter	Threshold +12dBu to -48dBu
Start-up Time	0
Release Time	1-100
Sampling Rate	96kHz
Phase	180° phase
LCD Display	2*16 character type LCD display
Input Level Match	2*7 points, -30dB to clip
Output Level Match	6*7 points, -30dB to clip
Preset	More than 100 PCS preconfigured/more than 100 PCS preconfigured
Language Options	English, Germany, Spanish, French, Dutch
Version Information	The version information of hardware, software, DSP module
Size/Power cord	
Product Contour Size	482x231x44.5 (1U)
Outer Packing Size	525x300x110 (1U)
Power Consumption	≤10W
Power	6.5A Power cord 100-240V ~/50-60Hz ±10%



Cautions:

SAE reserves the right to make changes in specification without prior notice. The final specification is subject to the user manual.

Warranty

Disclaimer

SAE Audio Co., Ltd. is not responsible for any damage of loudspeakers or other equipments caused by negligence or improper installation.

SAE Audio Co., Ltd. offers 2 years limited warranty for this product.

SAE Audio Co., Ltd. Guarantees that this product has no material defect during two years from the sales date; if the damage caused under the normal installation and operation, SAE Audio Co., Ltd. shall change the defective component and repair faulty product for free according to this Quality Guarantee Agreement. However, users must send the product to our factory or any authorized maintenance points or designated distributors, affording the re-paid freight, together with buying proof (including customer copy of product warranty card and payment receipt or invoice copy).

As per this Quality Guarantee Agreement, the returned product must be judged having manufacturing defect it self after our inspection. This agreement doesn't apply for products with damage caused by any wrong operation negligence, accident, inappropriate installation or products with no date code and sequence no or damaged ones beyond recognition.

SAE Audio Co., Ltd. shall not afford responsibility for any damage caused by accident or indirect factors. The agreement authorized you specific legal rights.

Address:

SAE Audio Co., Ltd. After Sale Department

No.39,East,Wenjiao Road,Heshun,Lishui,Nanhai,Foshan,Guangdong,China.

PC:

528241

Tel:

0757-8560-8331

Fax:

0757-8568-8191

Email:

support@saechina.com

Brand website :

www.saeaudio.com

Website:

www.saeaudio.com

www.saeaudio.com

Manufacturer:Sae Audio Co.,LTD.
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