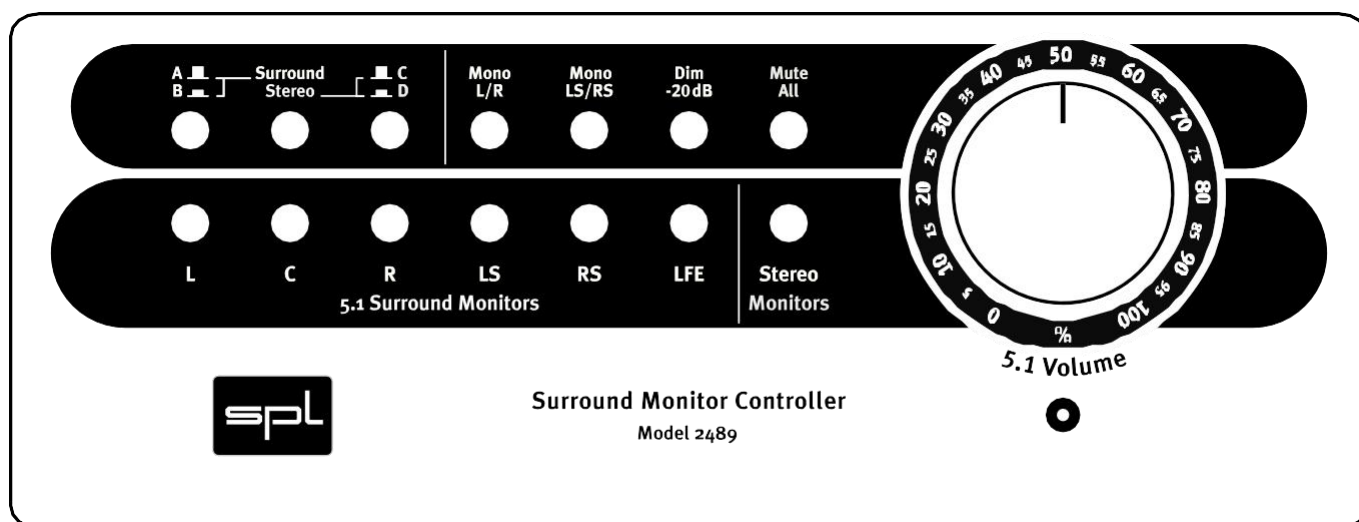




# Manual

## 用户手册



## *Surround Monitor Controller*

**Model 2489**  
环绕声监听控制器  
**Model 2489**

One-point stereo and 5.1 volume control, source and speaker management

单点立体声和5.1音量控制，信号源和扬声器管理

Version 1.0 – 6/2004

版本 1.0 – 6/2004

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研发: Wolfgang Neumann

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# Introductio

## 介绍

The SPL Surround Monitor Controller (SMC) is a one-point analog volume control and switching matrix for system-independent 5.1 surround and stereo monitoring. Designed to provide only the necessary functions with excellent audio quality, the SMC offers a uniquely cost-effective stereo and surround speaker and source management solution for essentially any audio application:

SPL环绕声监听控制器（SMC）是一个单点模拟音量控制和切换矩阵，用于系统独立的5.1环绕声和立体声监听。SMC的设计只提供必要的功能，并具有出色的音频质量，SMC为任何音频应用提供了独特的物有所值的立体声和环绕声扬声器，及音源管理解决方案：

- Surround and stereo production
- DVD-V, DVD-A, SACD and DTS authoring
- Film and video postproduction
- Video and game production
- A/V and multimedia production
- Audiophile home entertainment systems

- 环绕声和立体声制作
- DVD-V、DVD-A、SACD和DTS制作
- 电影和视频后期制作
- 视频和游戏制作
- A/V 和多媒体制作
- 高保真家庭娱乐系统

The advantages of the SMC become especially apparent in combination with modern audio and video production tools such as ProTools™, Nuendo™, Cubase™, Logic™, Deck™, etc. Monitor levels and source management can be handled independently of the software and with virtually no loss in quality. You no longer need to set up additional aux sends or an alternative surround master for monitoring. In addition, you won't have to worry about over- or underdriving the converters due to monitor levels.

SMC的优势在与现代音频和视频制作工具的结合中变得尤为显著。如：ProTools™、Nuendo™、Cubase™、Logic™、Deck™ 等。监听电平和音源管理的软件可以独立处理，几乎没有质量损失。你不再需要为监听设置额外的辅助发送或用于监听的替代性环绕主控装置。此外，你不必担心由于监听电平而导致转换器驱动过度或不足。

One of the SMC's biggest advantages is the possibility to manage several input sources: comparing and monitoring SACD or DVD material is much easier than having to import all of your audio files and set up monitor mixes – not to mention the conversion of multichannel audio.

SMC最大的优势之一是可以管理多个输入信号源：比较与监听SACD或DVD材料，要比导入所有的音频文件和设置监听混音容易得多—更不用说多声道音频的转换。

Standard A/V receivers are often used for this task. The problem with this is that the audio has to be either AD/DA converted or manipulated by signal-degenerating control circuitry (VCAs, DACs etc.) for volume control, so you never hear the unadulterated audio – especially frustrating when you’re working on SACD or DVD-A projects.

标准的A/V接收器经常被用来完成这项任务。这样做的问题是，音频必须经过AD/DA转换或由信号退化控制电路（VCA、DAC等）操纵，以实现音量控制，因此你永远听不到纯正的音频——当你在做SACD或DVD-A项目时，这非常令人不悦。

In addition to a surround speaker set, a stereo pair can be connected to and managed by the SMC. A Sub-D input connector provides six surround and two stereo input channels. Eight additional RCA connectors allow easy connection of SACD, DVD, CD or DAT players. A slave output allows the stereo or surround input signal to be routed directly to a recording device. Volume control is handled by a discrete six-layer potentiometer and all switching functions by extremely durable precision push buttons.

除了环绕声扬声器组，一对立体声也可以连接到SMC，并由其管理。一个Sub-D输入连接器提供六个环绕声和两个立体声输入通道。八个额外的RCA接口可以轻松连接SACD、DVD、CD或DAT播放器。一个从属输出允许立体声或环绕声输入信号被直接送入录音设备上。音量控制由一个离散电位器处理，并且所有的开关功能由非常耐用的精密按钮来处理。

SPL’s renowned electronic balancing circuitry forms the basis for the SMC’s I/O architecture. Its extended frequency range up to 100 kHz, exceptional dynamic spectrum and excellent common mode rejection ensure specs that exceed SACD standards, as only highest quality analog circuitry can provide.

SMC的I/O结构的基础来自SPL知名的电子平衡电路。它的频率范围扩展到100kHz，卓越的动态频谱和出色的共模抑制，确保规格超过SACD标准，只有最高质量的模拟电路才能提供。

The SMC’s rugged and ergonomic steel-blue desktop enclosure with its slanted front panel harmonizes perfectly with desktop production environments.

SMC的坚固和符合人体工程学的深蓝色的，具有金属光泽的台式外壳，其倾斜的前面板与台式设计完美协调。

**IMPORTANT:** Before connecting the SMC or any other equipment turn off all power at all units.

**重要提示:** 在连接SMC或任何其他设备之前，请关闭所有设备的电源。

It makes good sense to think about where you place your SMC before connecting it. It should be positioned so that you can easily reach it, but there are other considerations. Try not to place it near heat sources or in direct sunlight, and avoid exposure to excessive vibrations, dust, heat, cold or moisture. It should also be kept away from transformers, motors, power amplifiers and digital processors. In addition, please:

在连接SMC之前，考虑一下SMC的放置位置是很有必要的。应该是你很容易能接触到它的位置，但也需要其他考虑。尽量不要把它放在靠近热源或阳光直射的地方，并避免暴露在过度振动、灰尘、热、冷或潮湿的环境中。它还应远离变压器、电机、功率放大器和数字处理器。此外，还请：

- Do not open the case. You may risk electric shock and damage to your equipment.
  - Leave repairs and maintenance to a qualified service technician. Should foreign objects fall inside the case, contact your authorized dealer or support person.
  - To avoid electric shock or fire hazards, do not expose your unit to rain or moisture.
  - In case of lightning, unplug the unit. Always unplug the cable by pulling on the plug only; never pull on the cable.
  - Never force a switch or knob.
  - Use a soft, lint-free cloth to clean the case. Avoid cleaning agents as they may damage the unit.
- 
- 请不要打开外壳。你可能有触电和损坏设备的危险。
  - 把维修和保养留给合格的技术服务人员。如果有异物落入箱内，请联系您的授权经销商或技术支持人员。
  - 避免电击或火灾的危险，不要将设备暴露在雨中或潮湿的地方。
  - 在发生雷电时，请拔掉设备的插头。同时，一定只拉住插头，不要拉扯电缆。
  - 千万不要强行拉动开关或旋钮。
  - 使用柔软的无绒布来清洁外壳。避免使用清洁剂，因为它们可能会损坏本机。



# Power Supply

## 电源

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The SMC's power supply was carefully engineered to provide clean and consistent current – an important prerequisite for excellent audio. Built around a toroidal transformer, the power supply generates a minimal electromagnetic field with no hum or mechanical noise. The output side is filtered by an RC circuit to extract noise and hums inherent in commercial AC power.

SMC 的电源是经过精心设计的，以提供清洁和稳定的电流——这是实现卓越音频的重要前提。围绕一个环形变压器，电源产生一个最小的电磁场，没有嗡嗡声或机械噪音。输出端由RC电路滤波，以提取大量交流电源中固有的噪声和嗡嗡声。

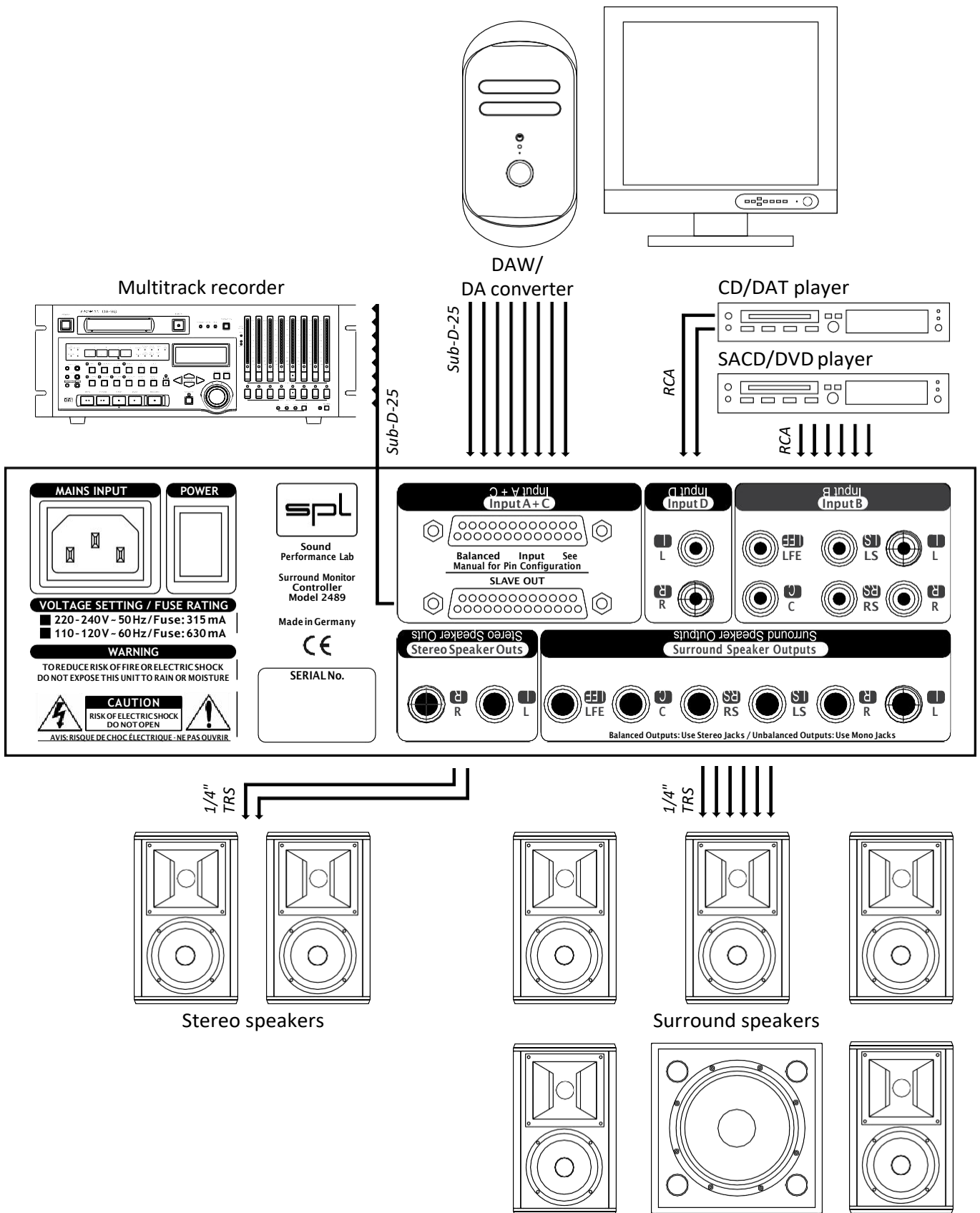
All audio-related components are fed by two separate voltage regulators to minimize disturbance from other components.

所有与音频有关的组件都由两个独立的电压调节器提供，以尽量减少其他组件的干扰。

An AC power cord is included for connection to the standard 3-prong IEC connector. The transformer, power cord and IEC connector are VDE, UL and CSA approved. The AC fuse is rated at 315mA (230V version) or 630mA (115V version).

包括一条交流电源线，用于连接到标准的三孔IEC连接器。变压器、电源线和IEC连接器都经过VDE、UL和CSA认证。交流电源保险丝的额定电流为315mA（230V版本）或630mA（115V版本）。

# Rear panel/connections 后面板/连接



Graphics courtesy of TASCAM Germany ([www.tascam.de](http://www.tascam.de)) and Christian Preissig, media dell' arte - text&ton, E-Mail: [media\\_dell\\_arte@mac.com](mailto:media_dell_arte@mac.com)



The SMC enclosure is EMC-safe and effectively shielded against HF interference. Nonetheless, you should carefully consider where you place the unit to avoid electrical disturbances. The SMC and all devices to be connected should be turned off before connections are made or change to avoid damage to your speakers and ears.

SMC外壳是EMC-safe的，有效地屏蔽了高频干扰。你需要仔细考虑放置设备的位置，以避免电气干扰。在进行连接或改变之前，应关闭SMC和所有要连接的设备，以避免对你的扬声器和耳朵造成损害。

## Inputs and outputs

### INPUT A & INPUT C (Sub-D 25; analog)

This Sub-D connector provides balanced connections for INPUT A & INPUT C (INPUT A for six surround channels, INPUT C for two stereo channels). Use this connector for your multichannel source, i.e. DAW or DA converter.

## 输入和输出

### INPUT A & INPUT C (Sub-D 25; 模拟)

这个Sub-D接口为INPUT A和INPUT C提供平衡连接（INPUT A为六个环绕声道，INPUT C为两个立体声道）。使用这个连接器来连接你的多声道源，即DAW或DA转换器。

### SLAVE OUT (Sub-D 25; analog)

The SLAVE OUT provides a direct output of the INPUT A & INPUT C signals for connection to external equipment e.g. recorders, leaving the converter outputs free.

SLAVE OUT (Sub-D 25; 模拟) SLAVE OUT提供了INPUT A和INPUT C信号的直接输出，用于连接外部设备，例如录音机，使转换器的输出得以自由。

### INPUT B & INPUT D (RCA)

Eight RCA input connectors are available for six surround channels and two stereo channels. INPUT B provides surround connection for SACD or DVD players, while INPUT D provides connection for stereo sources such as DAT or CD players.

**Tip:** If a recording device is connected to the SLAVE OUT, its outputs can be connected to INPUT B for tape monitoring purposes.

八个RCA输入连接器可用于六个环绕声道和两个立体声道。INPUT B为SACD或DVD播放器提供环绕声连接，而INPUT D为立体声源如DAT或CD播放器提供连接。

提示：如果一个录音设备被连接到SLAVE OUT，它的输出可以被连接到INPUT B，用于磁带监测。



## SURROUND and SPEAKER OUTPUTS (1/4" TRS)

Eight balanced, 1/4" TRS connectors allow connection of a six-channel surround speaker set and a stereo speaker pair. Use standard mono 1/4" plugs for unbalanced connections.

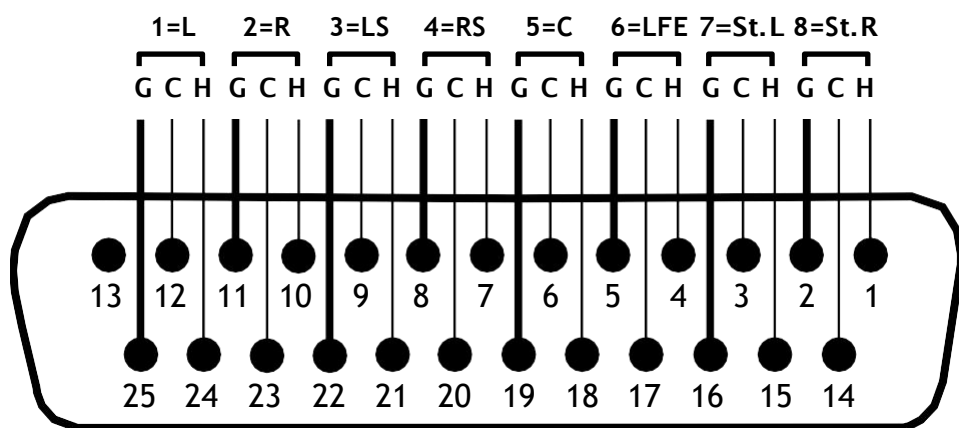
## 环绕声和扬声器输出(1/4" TRS)

八个平衡的1/4" TRS连接器可以连接一个六声道环绕扬声器组和一对立体声扬声器。使用标准的单声道1/4"插头进行非平衡连接。

## Sub-D 25 connector pin configuration

The pin configuration complies with the TASCAM standard.

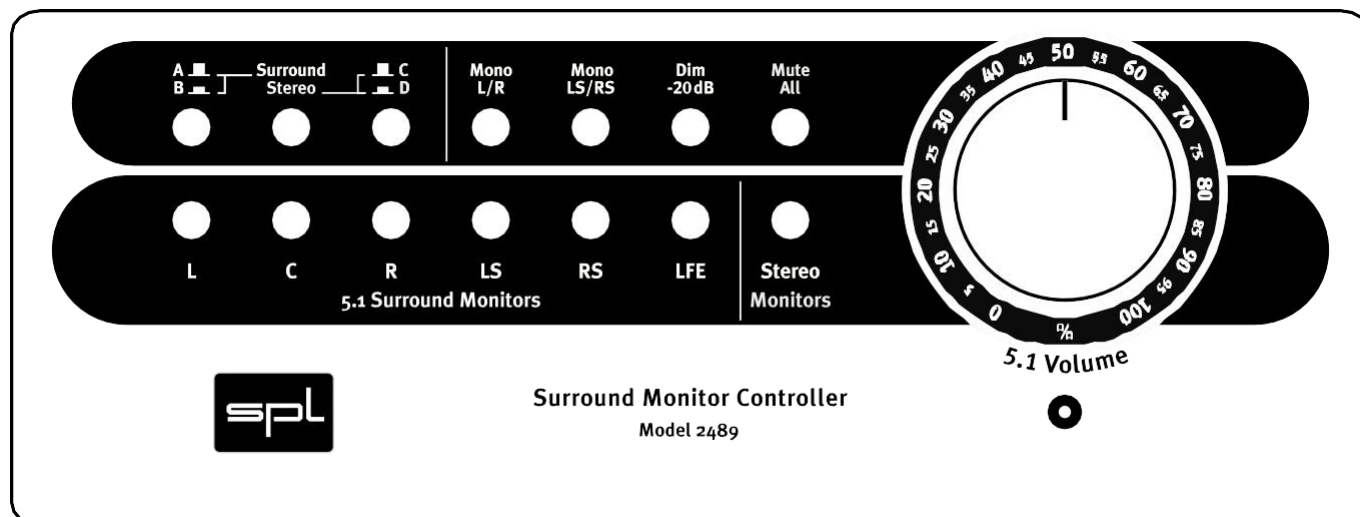
配置符合TASCAM标准



G = Ground, C = cold (-), H = hot (+)

# Operation

## 操作



### Volume Control

The volume is centrally controlled for all channels via a discrete six-level potentiometer with an extremely linear curve. The potentiometer controls the audio signals directly without any signal-degenerating circuitry such as VCAs or DACs, which tend to create tolerances between channels as well as distortion. The white circle with the potency scale can be easily marked using a pencil.

### 音量控制

所有通道的音量都是通过一个离散的六级电位器集中控制的，其曲线非常线性。电位器直接控制音频信号，没有任何信号衰减电路，如VCA或DAC，它们往往会造成通道之间的公差以及失真。带有电位器刻度的白色圆圈可以很容易地用铅笔来标记。

### Source Buttons Surround A/B and Stereo C/D

The source buttons Surround A/B and Stereo C/D allow easy switching between surround and stereo sources (inputs). Two surround and two stereo sources are available.

The middle button selects between surround and stereo sources. When depressed (in), the stereo sources are active; when not depressed (out) the surround sources are selected.

The left button selects either surround source A (out) and B (in), while the right button selects either stereo source C (out) or D (in).

### 信号源按钮 环绕声A/B和立体声C/D

环绕声A/B和立体声C/D按钮可以在环绕声和立体声源（输入）之间轻松切换。有两个环绕声和两个立体声源可用。

中间的按钮可以在环绕声和立体声源之间进行选择。当按下（in）时，立体声源被激活；当不按下（out）时，环绕声源被选择。

左边的按钮可以选择环绕声源A（输出）和B（输入），而右边的按钮可以选择立体声源C（输出）或D（输入）。

## Monitor Mode Buttons (Mono, Dim, Mute All)

The Monitor Mode buttons provide various monitoring functions: MONO L/R, MONO LS/RS, DIM -20 and MUTE ALL.

MONO L/R and MONO LS/RS switches the front L and R channels and the rear LS and RS channels to mono, respectively, and can be used to check phase correlation. The MONO LS/RS mode has no effect when a stereo speaker pair is selected.

DIM lowers the monitor volume by -20 dB without changing the volume pot setting, for example to control a mix at low volume (or to answer the phone...).

MUTE ALL does exactly what it says: it mutes all speaker outputs.

### 监听模式按钮 (Mono、Dim、Mute All)

监听模式按钮提供各种监听功能。MONO L/R, MONO LS/RS, DIM -20和MUTE ALL。

MONO L/R和MONO LS/RS分别将前面的L和R通道以及后面的LS和RS通道切换到单声道，可以用来检查相位的相关性。当选择了一对立体声扬声器时，MONO LS/RS模式没有效果。

DIM将监听音量降低-20dB而不改变音量罐的设置，例如在低音量下控制混音（或接听电话...）。

MUTE ALL的作用正如它所说的：它使所有的扬声器输出静音。

### Speaker Buttons

The speaker buttons enable each surround speaker output (L, C, R, LS, RS, LFE) and the stereo pair output to be switched on (pressed) and off independently.

**Tip:** If you are not using a surround speaker set, you can connect two stereo speaker pairs to the SMC. Simply connect one pair to the Stereo Speaker Outputs and the second pair to the Surround Speaker Outputs L and R.



### 扬声器按钮

扬声器按钮使每个环绕声扬声器输出（L、C、R、LS、RS、LFE）和一组立体声输出可以独立地打开（按下）和关闭。

提示：如果不使用一组环绕声扬声器，你可以将两个对装立体声扬声器连接到SMC。只需将第一对连接到立体声扬声器输出，第二对连接到环绕声扬声器输出的L和R。

# Technical Specifications

## 技术规格

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### Input Impedance 输入阻抗

Balanced 平衡 (Sub-D) 50kOhms

Unbalanced 非平衡 (RCA) >10kOhms

### Output Impedance 输出阻抗

Balanced 平衡 (1/4" TRS) <600 Ohms

### THD+N

-10 dB (Input level 输入电平) 0.04 %

0 dB 0.01 %

+10 dB 0.006 %

+18 dB 0.002 %

+22 dB 0.1 %

Noise, A-weighted 噪声, A-加权 -98 dB

Maximum Input Level 最大输入电平 +22 dB

Dynamic Response 动态反应 120 dB

### Common Mode Rejection 共模抑制

@ 100 Hz >70 dBu

@ 1 kHz >70 dBu

@ 10 kHz >60 dBu

@ 100 kHz >50 dBu

Frequency Response 频率反应 10 Hz-100 kHz (-3 dB)

Phase 相位 -36° (10 Hz-120 kHz, -3 dB center frequency)

Phase (linear) 相位 (线性) 20 Hz-100 kHz

Dimensions 尺寸 H x W x D: 91 x 272 x 220 mm (3 9/16" x 10 11/16" x 8 21/32")

Weight 重量 2.3 kg (5 lbs)

*SPL reserves the right to make technical changes without prior notice. SPL保留进行技术修改的权利, 不做另行通知。*

# Warranty

## 保修

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All SPL products come with a two-year manufacturer's guarantee against defects in material or assembly from the date of purchase.

所有SPL产品都有两年的制造商保证，从购买之日起，对材料或装配方面的缺陷提供保证。

End users are supported in the two-year guarantee through their distributor or dealer. In such cases, please contact your dealer for full guarantee conditions and service.

终端用户通过其分销商或经销商获得两年的保修支持。在这种情况下，请联系您的经销商，以获得完整的保证条件和服务。

Direct SPL product support requires product registration. Please fill out the guarantee card enclosed in the package legibly in printed letters and send it directly to SPL.

直接的SPL产品支持需要产品注册。请用印刷体填写包裹内的担保卡，并将其直接寄给SPL。

Or use the **online registration** form that may be reached at **www.soundperformancelab.com** (international clients) or **www.spl-usa.com** (US clients).

或是使用**在线注册表**，可在**www.soundperformancelab.com**（国际客户）或 **www.spl-usa.com**（美国客户）。

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# < Manual SMC, Model 2489 用户说明书

