

HiVi

*Hear The Difference*

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※因设计变更等原因, 所示资料可能与实物不符, 恕不另行通知。

Because of the design change, the illustration may not conform to the practicality. We will not inform again!

High performance speaker from

HiVi

*Hear The Difference*

## X SERIES MANUAL

### Car Amplifier

HiVi Acoustics, Inc.



Thank you for purchasing our car power amplifier. The power amplifier. The power has been designed to provide high quality performance with a minimum of maintenance. However, its performance will only be as good as the care and quality of components with which is installed. We therefore advise that you read these instructions very carefully to familiarize yourself with the product and its features.

Before installing the electronic crossover please read this instruction manual carefully. The instructions for mounting and connecting the set have to be followed precisely. If necessary, a service center should be consulted.

### **!!Attention!!**

Continuous,excessive exposure to sound pressure levels in excess of 85 dB can cause hearing loss.



### **警告**

在钻孔前首先要确定自己的布局设计方案。在煤气罐、液压气罐及电线旁边工作时要特别小心。确保功率放大器正确安装，以免由于在车内安装不当而对人员造成伤害，尤其是在发生事故的时候。

没有安装系统时要把所有的线收好束紧，以免对周围的设备造成损坏。

+12VDC电线一定要和电池接好。在安装或拆除系统电源时，要先切断+12V的电池线路。当连接RCA插口和喇叭接线时，要确定前面的设备是关闭着的。

如果你要更换保险丝，只能用系统支持的同样的保险丝来更换。使用不同安培数、不同类型的保险丝会给系统造成损坏。。



症状：一个声道没有声音

检查点：检查喇叭引线

方 法：检查电器是否短路或开路

方 法：检查喇叭引线，如果这种状况出现在功放之前，那么一定是输入线接法不正确。

症状：在高音量时功放关闭

检查点：检查喇叭的阻抗

方 法：仔细阅读下列关于喇叭阻抗的建议。检查喇叭连线是否正确。  
(为了确保负载阻抗是否合适，我们用一个欧姆表去测量每个声道总的负载。)



## Contents

Features and Specifications .....	3
Control and Connection Locations .....	4
Planning/Mounting Your System .....	6
Adjustment and Tuning .....	7
Wiring Diagram(4 CHANNEL) .....	9
Trouble Shooting Guide .....	11
Warning .....	13



## Common Features:

- Overload, Short and Thermal Protection Circuit
- Frequency Response: 20Hz-20KHz
- Full MOSFET Circuitry
- Selectable Bass Boost at 50Hz
- 50dB Channel Separation
- 90dB Signal to Noise Ratio
- 22K Ohm Input Sensitivity
- 200mV-2V Input Sensitivity
- THD < 0.1%

## Model Specific Specifications

### Model: X3

100W 4 channel High Performance Amplifier  
Selectable Crossover: LPF, FLAT, HPF  
50Hz-250Hz Low Pass Filter  
50Hz-250Hz High Pass Filter  
Selectable Bass Boost (0dB-12dB)  
4x100W Rms @ 4Ohm  
4x120W Rms @ 2Ohm  
2x250W Max @ 4Ohm Bridged  
Fuse Rating: 40Ax2  
Dimensions: 400Lx249Wx58H (mm)

### Model: X5

120W 4 channel High Performance Amplifier  
Selectable Crossover: LPF, FLAT, HPF  
Selectable Bass Boost (0dB-12dB)  
4x120W Rms @ 4Ohm  
4x150W Rms @ 2Ohm  
2x300W Max @ 4Ohm Bridged  
Fuse Rating: 20Ax4  
Dimensions: 400Lx249Wx58H (mm)



## 疑难解答

症状: 没有声音

检查点: 电源指示灯亮吗?

方 法:

- 1、检查功放保险丝。
- 2、确定电源控制线接好。
- 3、检查信号线。
- 4、检查增益控制。
- 5、检查前面机头或其它设备的音量。
- 6、清洁保险丝底座的接触面。

检查点: LED显示是超载了吗?

方 法: 检查喇叭是否短路或功放过热。

症 状: 功放不能启动

检查点: 电源线上没有电供给

方 法: 修理电源线或重新连接

检查点: 前面设备的控制线没有接好

方 法: 检查前面的设备连接是否紧密

检查点: 保险丝坏掉

方 法: 更换保险丝



## TRI 模式:

当主扬声器在立体声状态下，这种模式允许一个喇叭采用MONO声音模式。设置分频器(超低音)的开关到全通的位置。用一个耐压100V的无极性电容作为高通分频器以及一个电感作为低通滤波器，就像是上图所示的一样。下面的图里提供了电容和电感的值，以便于求得对应的分频频率。

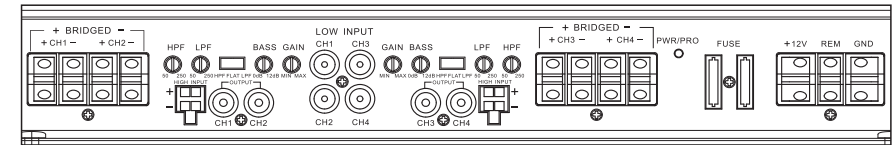
6dB 被动式滤波器的元件值

频 率	电感值	电容值
80 Hz	7.5 mH	470 uF
100 Hz	6.5 mH	330 uF
120 Hz	5.5 mH	330 uF
150 Hz	4 mH	220 uF

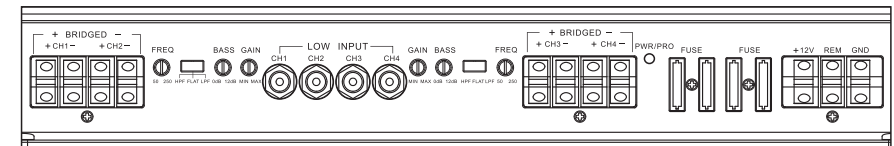


## Control & Connection Locations

### Model: X3



### Model: X5



## Controls

### Gain Adjustment:

This control adjusts to the amplifier’s input sensitivity. Input sensitivity is variable from 200 Millivolts to 2 Volt. Turning The control clockwise to increase sensitivity. Turning the control counter-clockwise will decrease sensitivity. This control is not a volume control is not a volume control for the amplifier. The amplifier can be driven to full power with a wide rang of signal levels. A low level signal will require increased sensitivity for full power. A high level signal will require decreased sensitivity.

### RCA Inputs:

These inputs are for signal cables from a source unit. Always use high quality RCA cables.

High input: (x3)

line ouput: (x3)



## Controls Continued ...

### Bass Boost Switch:

By using the bass boost function, bass notes at 50Hz are amplified in increments of 0dB to 12dB.

### Crossover:

Adjust the crossover for your chosen installation method

-LPF:Low Pass Filter-only(50Hz-250Hz)

-FLAT:No filtering for speakers. Use with full-range speakers.

-HPF:High pass filter(50Hz-250Hz)

### B-Terminal(Chassis ground):

To avoid unwanted ignition noise caused by ground loops,it is essential that the amplifier be grounded to a clean, bare metal surface of the vehicles chassis.

### B+Terminal(Battery Positive):

Due to the power requirements of the amplifier, this connection should be made directly to the positive(+)terminal of the battery. For safety measure, install an in-line fuse holder(not included) as close to the battery positive (+)terminal as possible with an ampere rating not to exceed total value of fuses on the amplifier.

### Remote Turn-on Input:

Connect to remote turn-on wire of head unit. The amplifier is turned“ON” remotely when the vehicle’s head unit is turned “ON”.

### Variable Low-Pass Filter(50Hz-250Hz):

For use as a dedicated subwoofer channel, set filter switch to “LPF”.

Adjust variable crossover frequency with control as desired. The amplifier input circuit filters out everything above 50Hz to 250Hz(dependent on the adjustment of the frequency control), so only the deepest bass notes are amplified.

### Variable High-Pass Filter(50Hz-250Hz):

For use as a dedicated mid-range channel, set filter switch to “HPF”.The circuit filters out all frequencies below 50Hz to 250Hz.

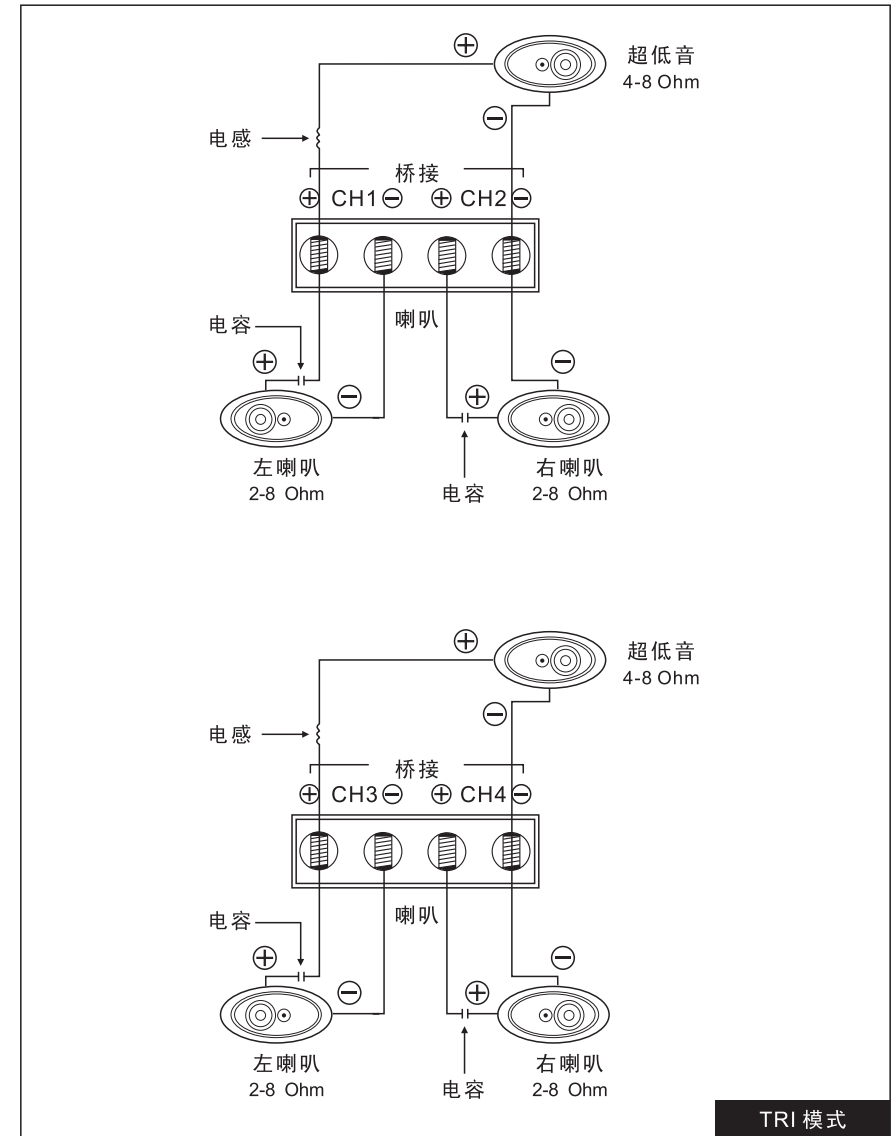
### Power Indicator LED:

This Blue LED will illuminate when the amplifier is turned “ON”.



## 接线图

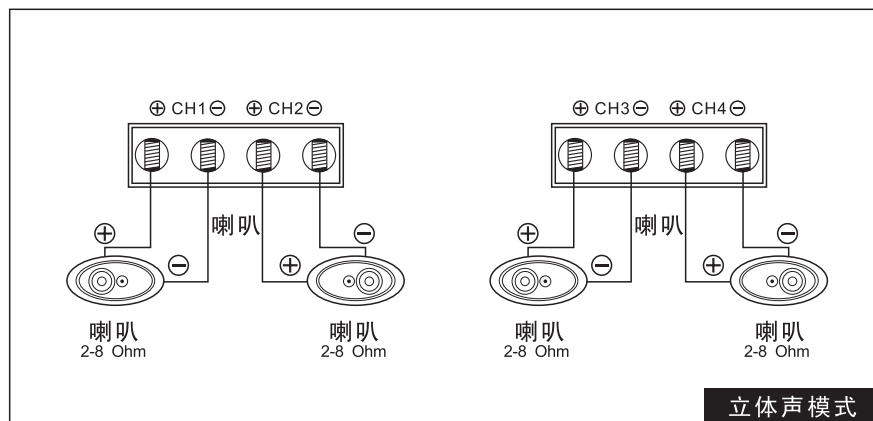
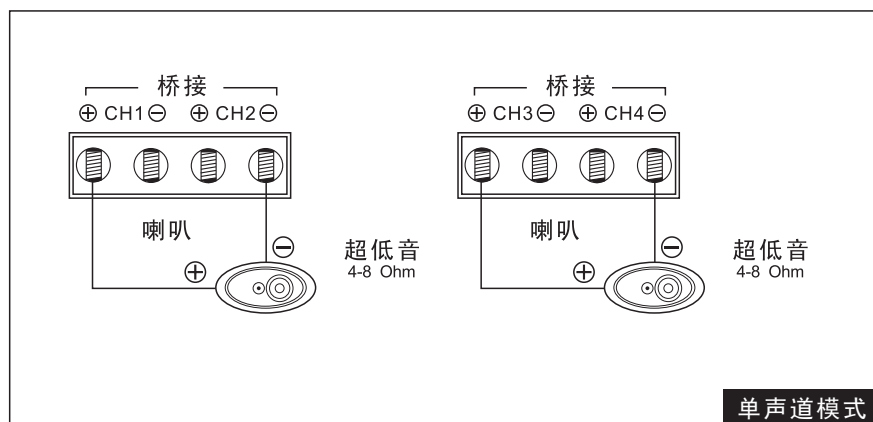
### X3/X5 4声道放大器





## 接线图

### X3/X5 4 声道放大器



## PLANNING YOUR SYSTEM

- If you plan to expand your system by adding other components sometime in the future, ensure adequate space is left. If the head unit/source is equipped with Pre-Amp outputs, it is possible to utilize them to drive this amplifier.
- Are your component speakers matched? The peak power rating of your speakers connect to greater than the max power of the amplifier speakers connect to this amplifier must have a 2-8 Ohm impedance.
- Taking consider of both the length of your leads, and routing when determining the mounting location. Pre-Amp input Jacks require high quality shielded RCA patch cords.

## MOUNTING YOUR SYSTEM

The mounting position of your amplifier will have a great effect on its ability to dissipate the heat generated during normal operation. The amplifier has an efficient heat sink for proper heat dissipation, also integrated with a thermal shutdown(for heat protection)circuit. Allowing air around the cooling fins will improve heat dissipation dramatically. DO NOT enclose the amplifier in a small box or cover it so that the air cannot flow around the cooling fins.

Temperatures in car trunks have been measured as(158°F) in the summer time. Since thermal shut-down point for the amplifier is (160°F) it must be mounted for maximum cooling. To achieve maximum convection air flow in an enclosed trunk, mount the amplifier in a vertical position, on a vertical surface.

Cooling requirements are considerably relaxed when mounting inside the passenger compartment since the driver will not often allow temperatures to reach a critical point. Floor mounting under the seat is usually satisfactory as long as there is at least 1 inch (2.54cm) above the amplifier's fins for ventilation.

To mount the amplifier:

1. Use the amplifier as a template to mark the mounting holes.
2. Use extreme caution, inspect underneath surface before drilling.
3. Remove the amplifier and drill the marked holes.
4. Secure the amplifier using the screws provided.



## ADJUSTMENT & TUNING

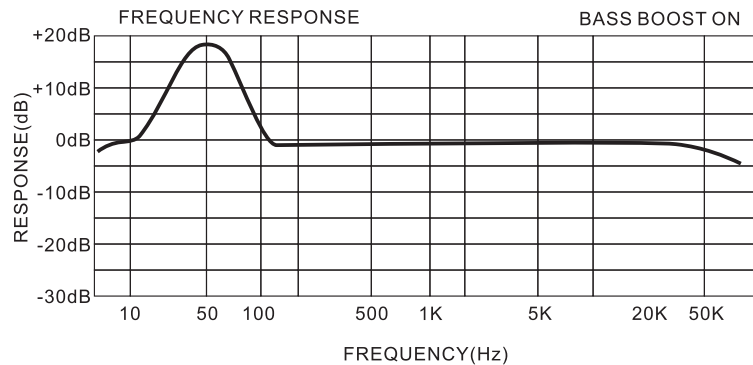
The amplifier will automatically turn on a few seconds after you turn your vehicle's ignition switch to ACC or ON or turn on your auto sound system, depending on how you have wired the system. The POWER indicator on the side of the amplifier lights illuminate when the amplifier is on. Your amplifier requires power from your vehicle's battery during operation. To protect your battery from discharging, do not operate the amplifier unless your vehicle is running.

**Note:** Your amplifier temporarily shuts down if it gets too hot, then restarts automatically once it cools.

For the best performance, you must set LEVEL(MIN/MAX) on the side of the amplifier to adjust the level of the audio signals that enter the amplifier.

1. Use a screwdriver to turn LEVEL(MIN/MAX) fully counterclockwise to MIN.
2. Turn the auto sound system's volume control to about one-third of its full range.
3. Adjust LEVEL(MIN/MAX) until the sound is at the level you want the amplifier to produce.
4. Turn up the auto sound system's volume control until the sound begins to distort. Then immediately turn the volume down to point where the distortion began.
5. Adjust LEVEL(MIN/MAX) until the sound is at the level you want the amplifier to produce.
6. Adjust the auto sound system's volume control to a comfortable listening level.

**NOTE:** Raising the LPF frequency allows higher frequencies to reach the bass speakers while blocking lower frequencies from midrange speakers. Lowering the Bass frequency allows lower frequencies to reach the midrange speakers while blocking higher frequencies from bass speakers.



## 调试和调音

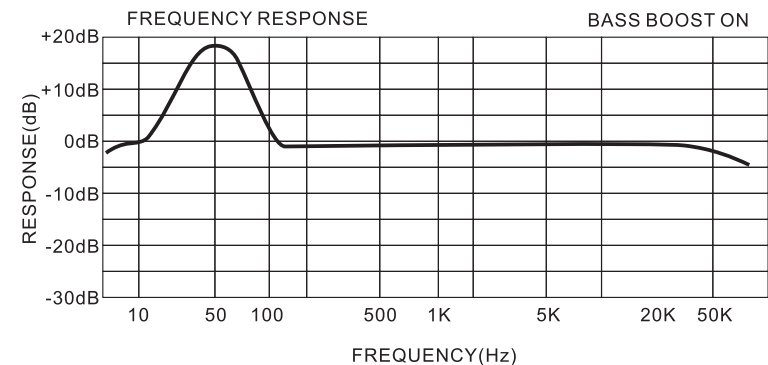
在你开启ACC电源开关或打开音响系统后，放大器会自动接通。功放开着的时候，它侧面的电源指示灯就一直亮着。在整个机器运转期间放大器需要车载电池提供能源。为了防止电池跑电，除非你确定汽车是在运行状态下否则不要启动放大器。

**注意：**如果放大器过热的话它会暂时关闭，当它冷却后它会自动重启。

为了达到最佳的表现力，您必须调节放大器侧面的电平旋钮（最大/最小）使声音达到最好。

- 1、用螺丝刀反时针旋转电平旋钮到最小。
- 2、调节机头的音量在1/3位置处。
- 3、调节功放的电平旋钮直到达到良好、舒适的听觉效果为止。
- 4、调节机头的音量直到声音开始失真。然后调小一点使它刚刚没有出现失真。
- 5、调节功放的电平旋钮直到调试出您想要的声音。
- 6、调节机头的音量直到达到舒适的听觉效果为止。

**注意：**当中音喇叭的低频受到阻塞时，增强LPF的频率并允许高频进入低音的频率传进入中音喇叭。







## 系统的设计与组装

- 如果你打算以后购买其它的设备来扩展你的系统的话，首先就要确保有足够的空间留下来。如果你把声源和前置输出设备组装到一起的话，你可以利用它们的组合去驱动这台功放。
- 您的喇叭匹配吗？喇叭的峰值功率一定要大于或等于功放的最大功率。一定要在2-8 Ohm阻抗的条件下连接喇叭和功放。
- 当您决定怎么样安装时，您就要考虑引线长度和路线安排这两个问题。前置放大器的输入需要高质量的屏蔽式RCA线。

## 组装你的系统

把功放安置到一个合适的位置，这一点有助于在正常工作环境中减少功放的热量。这款放大器有着非常高效率的散热器，并结合了防热电路板来抵制任何可能出现的热量侵袭。不要让杂物把放大器包起来，这样就不能让冷空气来回流动了。在夏天汽车表面的温度可以达到158°F。因为功放的热保护点是160°F，安装时必须考虑能得到最大的冷却量。为了在封闭的空间里得到对流空气，我们把放大器安置在汽车尾箱的垂直面上，这样就能达到上述的效果。

如果将功放安装在座位下面，功放的散热器与座位间最少要有1英寸（2.54cm）的空隙，所产生的声音效果也是令人满意的。

## 安装放大器：

- 1、用一个放大器作为模板标出安装孔。
- 2、在钻孔前，小心谨慎的检查底部表面的状况。
- 3、拿开放大器然后用钻头钻出安装孔。
- 4、确保钻出足够的安装放大器的螺丝孔。

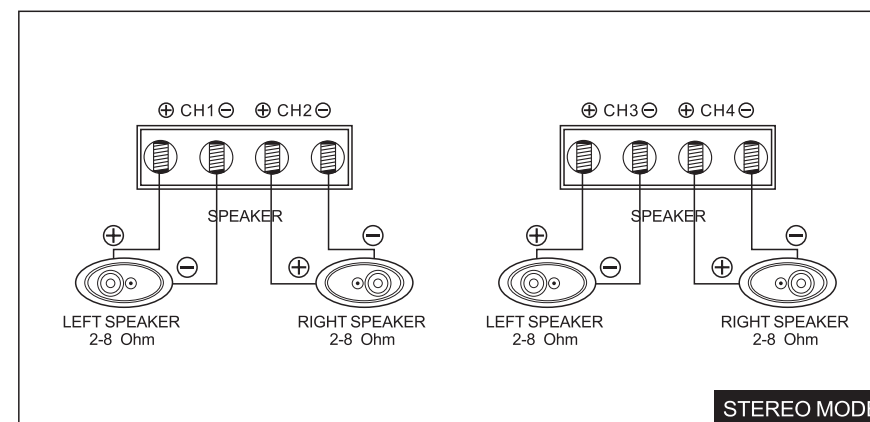
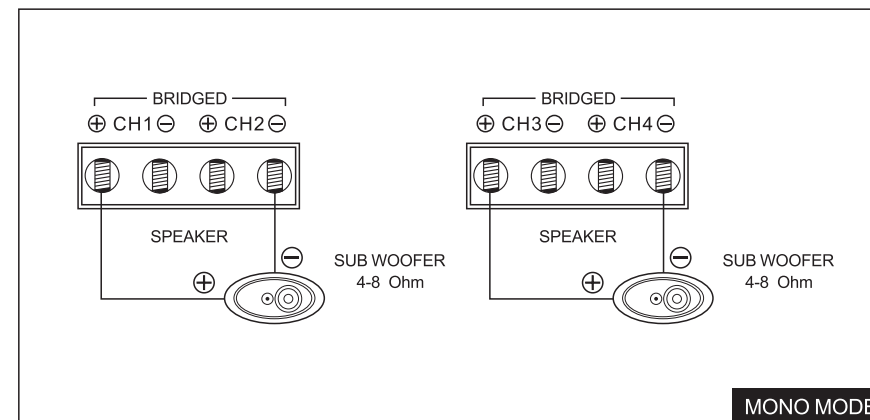
## 注意：

电源线的安排及使用是很慎重的。可能的情况下，越粗越好，我们建议最小采用8AWG的线材，这样可以避免过多的压降。地线的安排尽可能短。



## Wiring Diagram

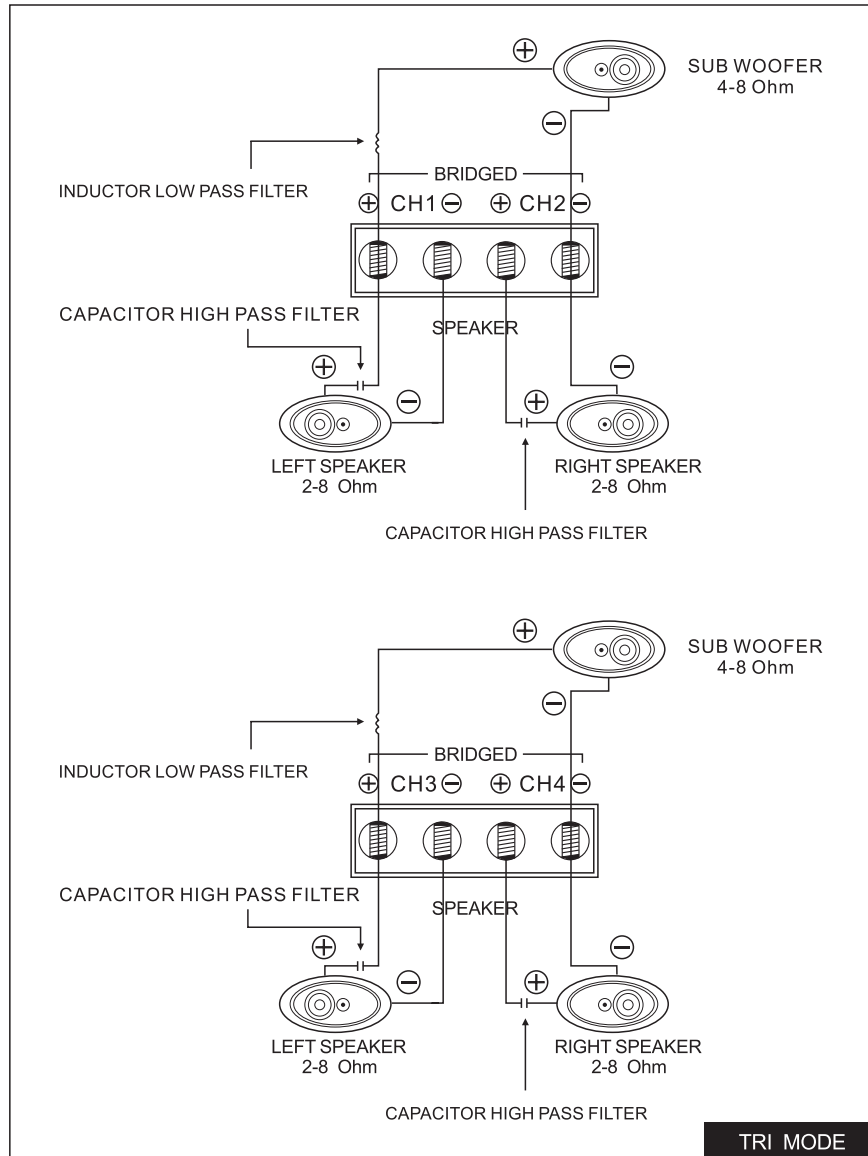
### X3/X5 4 Channel Amplifiers





## Wiring Diagram Continued ..

### X3/X5 4 Channel Amplifiers



### 低音增强电位器:

使用这个功能, 注意低音在50Hz时被增强的增量为0dB-12dB可调。

### 分频器: 根据您所选择的装配方法调节分频器

- LPF: 低通滤波器(50Hz-250Hz)
- FLAF: 全通。不经分频器, 使用全频喇叭。
- HPF: 高通滤波器(50Hz-250Hz)

### GND-端子(接地):

避免由地线回路引起的有害噪音, 这是非常重要的, 放大器地线必须要接触到车内洁净、裸露的金属表面。

### +12V端子(电池正极):

应该把它直接接到电池的(+)接线端口上。出于安全考虑, 要在尽可能接近电池(+)接线端口地方安装一个保险丝, 它的安培数不能超过放大器上保险丝的安培总和。

### 控制线连接:

连接到前面设备的控制线。当前面的设备(如CD机)被打开时, 放大器也就跟着打开。

### 可调的低通滤波器(50Hz-250Hz):

为了更好的使用超低音声道, 我们专门在LPF上安装了一个滤波器开关, 它的频率在50Hz-250Hz频率范围内可调。

### 可调的高通滤波器(50Hz-250Hz):

这个滤波器可以滤掉50到250Hz以下的低频(具体依照所设定的频率)。

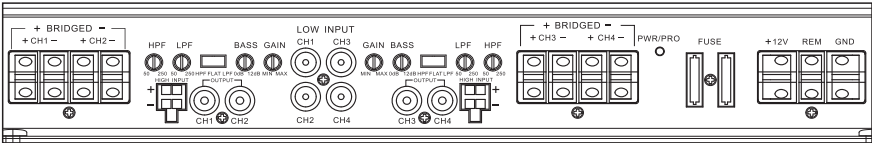
### 电源指示灯LED:

当放大器启动时LED将会亮起。

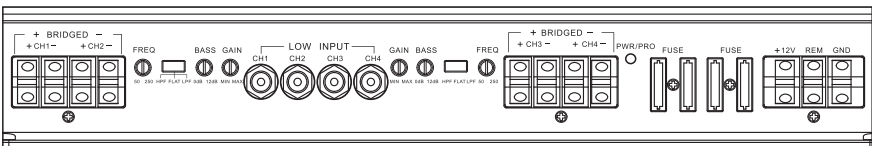


控制与连接

型号: X3



型号: X5



控制

增益调节:

这是调节放大器的输入灵敏度的。输入的灵敏度在200毫伏-2伏之间可调。顺时针旋转可以增加灵敏度。逆时针旋转控制钮可以减低灵敏良。这个控制并不是功放音量大小的控制。这个放大器可以在宽频信号电平驱动下全功率工作。为了全功率工作，当提供低电平信号时需要增加灵敏度，提供高电平信号时，就要降低灵敏度。

RCA输入:

- 要采用高品质的RCA线。
- 高输入: (X3)
- 线性输出: (X3)



Wiring Diagram Continued ...

TRI-MODE:

This mode allows a speaker to be operated in MONO mode while the main speakers are playing in stereo. Set the crossover(Sub-woofer)switch on Full position. Use a 100 Volt, non polarized capacitor for ahigh pass crossover and a wire coil(inductor) to block high frequencies from the(Sub) woofer as shown in the figure above. Capacitor and inductor values are provided in the section below to determine certain crossover fr equencies.

COMPONENT VALUES FOR 6dB PASSIVE FILTER

FREQUENCY	INDUCTOR VALUES	CAPACITOR VALUES
80 Hz	7.5 mH	470 uF
100 Hz	6.5 mH	330 uF
120 Hz	5.5 mH	330 uF
150 Hz	4 mH	220 uF



## TROUBLE SHOOTING

### SYMPTOM

NO SOUND

### CHECK POINT

Is the power LED illuminated?

### CURE

1. Check fuses in the amplifier.
2. Be sure Turn-on lead is connected
3. Check signal leads.
4. Check gain control.
5. Check Head Unit volume level.
6. Clean contacts on fuse holders.

### CHECK POINT

Is the Overload LED illuminated?

### CURE

Check for speaker short or amplifier overheating.

### SYMPTOM

AMP NOT SWITCHING ON

### CHECK POINT

No power to power wire

### CURE

Repair power wire or reconnections.

### Check point

No power to remote wire with Head unit on

### CURE

Check connections to Head unit.

### CHECK POINT

Fuse broken

### CURE

Replace Fuse



## 特点:

过载、短路以及热保护  
频率响应: 20Hz-20KHz  
MOSFET电路  
可以在50Hz增强低音  
声道分离度为50dB  
信噪比为90dB  
输入阻抗为22KOhm  
输入灵敏度为200mV-2V  
THD<0.1%

## 详细型号的规格

### 型号: X3

100W 4声道高性能放大器  
可选择的分频器类型: LPF、FLAT、HPF  
50Hz-250Hz的低通滤波器  
50Hz-250Hz的高通滤波器  
可选择的低音增强(0dB-12dB)  
4X100W Rms @ 4Ohm  
4X120W Rms @ 2Ohm  
2X250W Max @ 4Ohm 桥接  
保险丝: 40 Ax2  
尺寸: 400Lx249Wx58H (mm)

### 型号: X5

120W 4声道高性能放大器  
可选择的分频器类型: LPF、LAT、HPF  
50Hz-250Hz高通滤波器或全通  
可选择(0dB-12dB)低音增强  
4x120 W Rms @ 4Ohm  
4x150 W Rms @ 2Ohm  
2x300 W Max @ 4Ohm 桥接  
保险丝: 20Ax4  
尺寸: 400Lx249Wx58H (mm)



## 目 录

特点和规格 .....	16
控制和连接 .....	17
系统的设计与组装 .....	19
调试与调音 .....	20
接线图(4声道) .....	21
疑难解答 .....	24
警告 .....	26



## TROUBLE SHOOTING CONTINUED...

### SYMPTOM

NO SOUND IN ONE CHANNEL

### CHECK POINT

Check speaker leads.

### CURE

Inspect for short circuit

Check for open connection

### CURE

Check speaker leads reverse left and right RCA

Input to determine if it is occurring before the amp.

### SYMPTOM

AMP TURNING OFF AT HIGH VOLUME

### CHECK POINT

Check speaker load impedance

### CURE

Inspect the speaker load impedances recommendations as followed.

Check whether the wiring configuration for speaker is correct or not.

(To verify proper load impedance, use an OHM meter to measure the total load for each channel of the amplifier.)



## WARNING

Investigate the layout of your automobile thoroughly before drilling or cutting anyholes. Use extreme care when you work near the gas tanks, gas or hydraulic lines, and electrical wiring. Always make sure the power amplifier is securely mounted. Mounting the amplifier securely to the automobile will prevent damage to the car or injury to a person, particularly in the event of an accident.

Don't mount the system so that the wire connections are unprotected or are subject to pinching or damage from nearby objects.

The +12VDC power wire must be fused at the battery positive terminal connection. Before making or breaking power connections at the system power terminals, disconnect the +12V wire at the battery. Confirm the head unit and /or other equipment are turned off while connecting the input RCA jacks and speaker terminals.

If you need to replace the amplifier fuses, do it only use a fuse identical to that supplied with the system. Using a fuse of different type or rating may cause in damage to the system which isn't covered by the warranty.



感谢您购买惠威的汽车功率放大器。这些功率放大器不仅拥有非常高水准的表现，同时也拥有最高的品质。然而，这一切高品质的表现不只是体现在零部件质量的好坏及制作工艺上。因此，我们建议您仔细阅读这本手册以便于您更快地熟悉我们这款产品和他的功能。

注意，请在安装前仔细阅读此安装及使用手册。并严格按照下列步骤进行连接组装。如果仍然有问题的话，请与我们服务中心取得联系。

！！注意！！

长期将声压级置于超过85dB情况中将会对听觉产生损害，请务必注意。