QLS-HiFi

Full-Digital Amplifier

用户指南

User Guide

QA100

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Notice：

a) The machine is BTL output, that is to negative side of speaker out is not public grounded, the two speakers cable must independent connect, no grounding together.

b) It has high voltage inside. Please don't open the shell by yourself to prevent electric shock. If needed, please do it under the guidance of professional personnel.

c) The product must be used in a dry and ventilated environment. During the usage, don't put anything above the air vent at the top.

前言：

QA100 数字功放是乾龙盛（QLS-HiFi）公司继数字音源 QA550 和随身播放器 QA350 之后推出的一款真正纯数字功率放大器。

传统功率放大器输入和处理的是模拟信号，模拟信号在传送的过程中会产生各种非线性失真、频率衰减、声道分离度差等影响听感的负面因素，而 QA100 是直接将输入的数字信号进行处理和放大，通过 PWM 调整后滤波成音频信号直接输出给音箱，整个流程几乎传输和处理的都是抗干扰能力强于模拟信号的数字信号，近 100%还原录音本身的效果，无音染，也正因为这个原因，使得数字功放比模拟功放更容易出好声。

QA100 延续了乾龙盛公司在音频领域的设计风格。同前几款产品一样，QA100 依然具有功能简单、声音还原度高、无音染等特点。

QA100 能自动识别并支持 16bit 和 24bit，32K-192K 常用音频格式的立体声数字信号输入。使用异步采样转换（ASRC）技术并配合高精度温补晶体重整数字时钟，大大降低数字时钟的抖动（Jitter），提供噪声更小、信息量更大、 精度更高的信号给放大器，同时也减小了输入数字信号对音质的影响，因此大大的降低了对前端音源的要求。有了 QA100，我们可以发现，普通的 CD 机，VCD 和 DVD 机也可以出来好音质。

主要性能参数

- 输入电压：AC 90V - 240V
- 支持采样率：16bit - 24bit； 32K - 192K.
- 负载阻抗：4 - 8Ω.
- 输出功率：2 x 100W@4Ω；2 x 60W@8Ω.

注意：

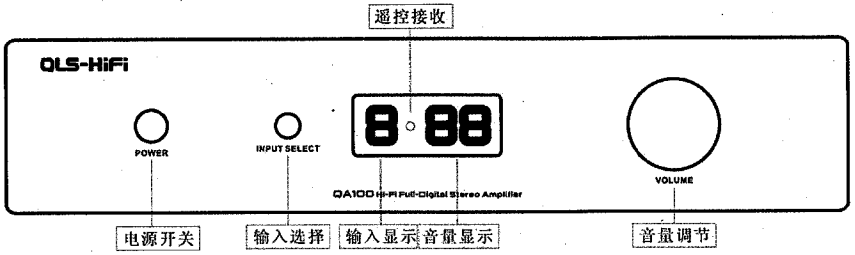
1、 本功放是 BTL 输出，音箱的负极不能连接到机器外壳或地；两个声道必须独立连接,不能将两个声道的负极或正极连接到一起.

2、 内部有高压，不要私自打开外壳以防触电，如有需要，请在专业人士指导下完成。

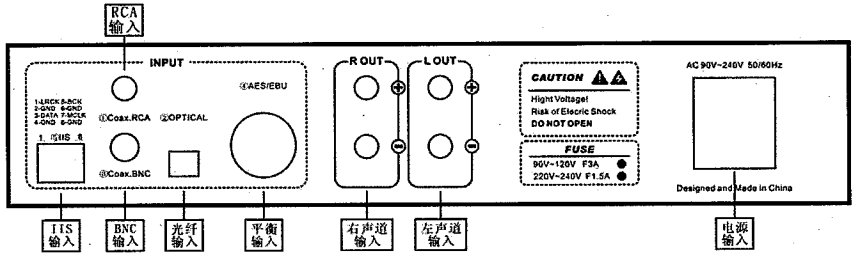
3、 产品必须在干燥、通风的环境下使用，使用中不要把其他物品放在上方的散热孔位置。

功能接口说明：

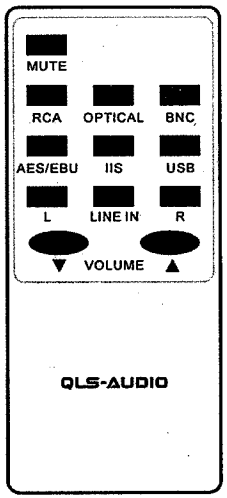
一、主机前面板



二、主机后面板

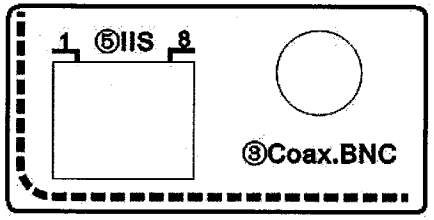


三、配套遥控器



MUTE：静音
RCA：选择 RCA 通道输入
OPTICAL：选择光纤通道输入
BNC：选择 BNC 通道输入
AES/EBU：选择数字平衡通道输入
IIS：选择 IIS 通道输入
USB：选择 USB 通道输入（备用）
LINE IN：选择线性通道输入（备用）
L：左声道微调
R：右声道微调
VOLUME-：音量减小
VOLUME+：音量加大

四、IIS 接口



1、LRCK 2、GND
3、DATA 4、GND
5、BCK 6、GND
7、MCLK 8、GND

支持的音源格式：

自动识别采样大小为 16bit 和 24bit 的音源输入。
自动识别采样频率在 32K-192K 之间的常用立体声数字音源输入。
最高支持 24 位 192K 的立体声 PCM 数字信号。

支持的输入接口类型（输入显示）

1、Coaxial 同轴输入
- ◆ RCA （1）
- ◆ BNC （3）

2、Optical 光纤输入 （2）
3、EBU/AES 数字平衡输入 （4）
4、IIS 输入
- ◆ RJ-45 座子 （5）
- ◆ 5 芯插针（主机内部预留,与另一种 IIS 输入模式相同操作）

输入通道选择

可选输入通道包括 RCA，BNC，光纤，EBU/AES 和 IIS。
选择方式：
- ◆ 通过主机前面板上的“INPUT SELECT”键循环选择。
- ◆ 通过配套遥控器上相关输入通道按键选择。

选择通道时，主机前面板“输入显示”显示所选通道的序号，如选择 RCA 输入时显示“1”，选择 IIS 输入时显示“5”。输入通道序号在主机后面板输入通道旁边有标识。

静音处理

进入方法：
按下配套遥控器上“MUTE”键后进入静音状态，同时主机前面板音量显示部分显示“--”。
退出方法：
- ◆ 再次按下遥控器上的“MUTE”键；

- ◆ 按遥控器上任何其它键或者主机前面板上的“INPUT SELECT”键和调节“VOLUME”旋钮都可退出静音模式。

主音量调整

可以旋转主机前面板上的“VOLUME”调节主音量。顺时针方向增大音量，逆时针方向减小音量。
可通过配套遥控器上“VOLUME-”和“VOLUME+”键调节主音量。
调节音量时，主机前面板“音量显示”显示相应变化。
音量调节时显示范围为 0-79，显示 0 时音量最小，显示 79 时音量最大。
音量调节好后 5-10 秒后自动保存，断电不丢失，下次开机时自动读出上次设置的音量。
5 个输入通道音量单独设置和保存。

声道音量微调

先按遥控器上的“L”键（左声道）或“R”键（右声道）进入声道微调模式，然后按遥控器上的“VOLUME-”和“VOLUME+”键进行微调。
声道微调时，主机前面板“音量显示”显示声道的微调值。
微调范围在 -5 与+5 之间，对应声道音量从减小 5db 到增加 5db。
声道微调完成后 3-5 秒后自动保存，并退出声道微调模式，“音量显示”部分显示主音量。
5 个输入通道共用同一组声道微调。

常见故障诊断和修复方法：

1、 开机无显示也无输出。
这种情况有可能电源输入的保险丝被烧坏。解决方法：取下电源保险丝确认是否正常。

2、 开机有显示但无输出。
这种情况有以下几种可能性：
- ◆ 输入通道设置错误或当前工作通道不正常，可选择其他通道试试。
- ◆ 主机内部输出部分的保险丝烧坏。解决方法：打开主机上壳，检查大板子上电源输入旁边的保险丝 F1 是否正常。
  (****主机内有高压，请在专业人士指导下打开****)

3、 主机工作正常但遥控器工作不正常。
这种问题可能是因为遥控器电池电量不足够，可更换新的电池后再试。

以上故障经过修复后故障依然存在或使用中有其它问题，请与我们联系。

Introduction :

Thank you for purchasing the QLS-HiFi QA100.

QA100 is a true digital amplifiers, a stereo 100 Watt(@4Ω)amplifier with 5 single digital audio input.

Traditional amplifiers input and process analog signals, which will generate various negative factors that may impact the sound effect, such as distortion, frequency attenuation and bad channel separation. QA100 directly process and amplify the input digital signals,The whole process mostly transits and processes digital signals with an anti-jamming capability higher than analog signals, It is this very reason why digital amplifier tends to generate better sound effects than analog amplifier.

QA100 can automatically recognize and support 16bit and 24bit 32K-192K stereo PCM digital signal input. The asynchronous sampling rate conversion (ASRC) technology is adopted. Combined with high-precision temperature compensated crystal to reform digital clock, it can drastically reduce jittering of digital clock and provide signals with smaller noises, a larger amount of information and higher precision to the amplifier. In the meantime, impact of input digital signals on the acoustics is also reduced, which therefore drastically lowers requirement for the front sound source.

Major Performance Parameters:

- Input Voltage: AC 90V ~ 240V.
- Sampling Rate: 16bit 24bit 32K-192K.
- Impedance range: 4-8 Ω.
- Power output: 2 x 100W@4Ω ; 2 x 60W @8Ω.

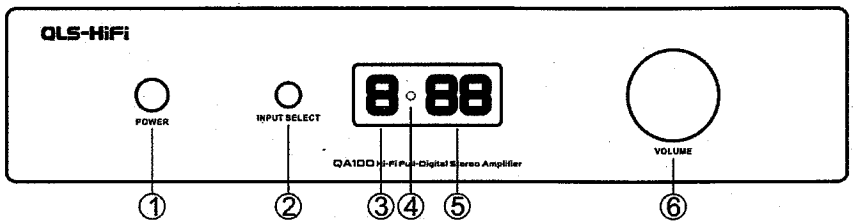
Notice:

a) The machine is BTL output, that is to negative side of speaker out is not public grounded, the two speakers cable must independent connect, no grounding together.

b) It has high voltage inside. Please don't open the shell by yourself to prevent electric shock. If needed, please do it under the guidance of professional personnel.

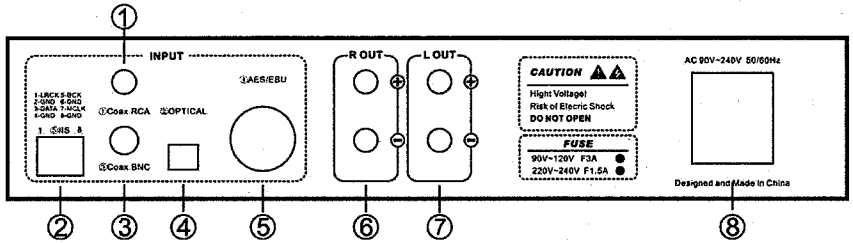
c) The product must be used in a dry and ventilated environment. During the usage, don't put anything above the air vent at the top.

I. Front Panel of the Host Machine.



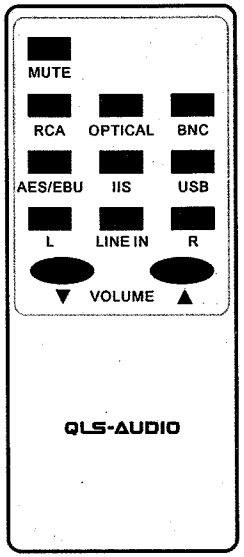
①: Power Switch.
②: Input Select.
③: Input Channel NO. Display.
④: Remote Control Receive.
⑤: Volume Display.
⑥: Volume Control.

II. Back Panel of the Host Machine.



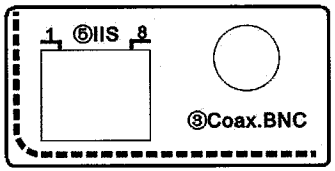
①: RCA Input(Coaxial).
②: IIS Input.
③: BNC Input(Coaxial).
④: Optical Input.
⑤: AES/EBU Input.
⑥: Output of the Right Channel.
⑦: Output of the Left Channel.
⑧: AC Power Input.

III. Matched Remote Control



MUTE: Mute key
RCA: Select input-RCA
OPTICAL: Select input-Optical
BNC: Select input-BNC
AES/EBU: Select input-AES/EBU
IIS: Select input-IIS
USB: Select input-USB(reserved)
LINE IN: Select input-Line In(reserved)
L: Fine-tuning of the left channel
R: Fine-tuning of the right channel
VOLUME-: Reduce volume
VOLUME+: Increase volume

IV. IIS Interface.



1、LRCK 2、GND
3、DATA 4、GND
5、BCK 6、GND
7、MCLK 8、GND

Supporting Audio Formats:
It can automatically recognize sampling rate input of 16bit and 24bit 32K-192K
(It only support Stereo PCM digital signals, Not support DTS or AC-3…)
It can support the maximum PCM digital signals of 24bit 192K.

Supporting Input Interface Types (Channel NO.)
1. Coaxial Input
   - ◆ RCA (1)
   - ◆ BNC (3)
2. Optical Input (2)

3. EBU/AES Input (4)
4. IIS Input
   - ◆ RJ-45 Base (5)
   - ◆ 5-Core Pin (reserved in the PCB Board)

Selection of Input Channels
Input channels that can be selected include RCA, BNC, optical, AES/EBU and IIS channels.
Selection Mode:
- ◆ Through cycle selection by using the "INPUT SELECT" button on the front panel of the host machine.
- ◆ Select by using related buttons of channels on the remote control.

During selection of channels, the "Input Display" on the front panel of the host machine will display the channels number of the selected channel. For example, when you select RCA input, it will display "1", and when you select IIS input, it will display "5". The channels numbers of input channels are marked beside the input channels on the back panel of the host machine.

Mute Processing
Method:
Press the "MUTE" button on the remote control to enter the mute status. In the meantime, the volume display on the front panel of the host machine will display "- -".
Exit Method:
- ◆ Press "MUTE" button on the remote control once again;
- ◆ Press any other button on the remote control or the "INPUT SELECT" button on the front panel of the host machine and adjust the "VOLUME".

Main Volume Adjustment
The main volume can be adjusted by rotating the "VOLUME" on the front panel of the host machine. Rotate clockwise, the volume will be increased, and rotate counterclockwise, the volume will be reduced.
The main volume can also be adjusted through the "VOLUME-" and "VOLUME+" buttons on the remote control.
During adjustment of volume, the "Volume Display" on the front panel of the host machine will show corresponding change.
The display range during adjustment of volume is 0-79. Display of "0" means the volume is the minimum, and display of "79" means the volume is the maximum.
About 5-10 seconds after the volume adjustment, it will be saved automatically, Next time you start the machine, it will automatically read the volume set last time.
volumes of the 5 input channels can be set up and saved separately.

Fine-Tuning of L or R Channel Volume

First press the "L" button (left channel) or the "R" button (right channel) to enter the channel fine-tuning mode, and then press the "VOLUME-" and "VOLUME+" buttons on the remote control to conduct fine-tuning.

During fine-tuning, the "Volume Display" on the front panel of the host machine will show the fine-tuning values of the channel.

The fine-tuning range is between -5 to +5, which means volume of corresponding channel reduces 5db to increases 5db.

About 3-5 seconds after fine-tuning, it will be save automatically and exit the fine-tuning mode. The "Volume Display" part will show the main volume.

The five input channels are fine-tuned through the same channel.

Common Fault Diagnosis and Solutions:

1. No display

This situation could be caused by burnt fuse of power input.

Solution: Take out the fuse of the power supply to check it.

2. There is display but no output.

- The input channel select wrong. You can try another channel.
- The fuse of the pcb board inside the host machine is burnt.

Solution: Open the top shell of the host machine, and check the fuse F1 beside the power input on the big board.

3. The host machine works normally but the remote control goes wrong.

This situation could be caused by low battery of the remote control. You can exchange the batteries and try again.

If the problems mentioned above remain after repair or there are other problems during the usage, Please contact us.

Appendix 1: Product Warranty Card

When the product has problems, please fill this form, tear it down and deliver it to us along with the product.

Product Name	QA100 Digital Amplifier	Serial Number	
Purchase Date	(DD-MM-YY)		
Name		Zip/Postal Code	
Phone No.		E-mail	
Shipping Address			
Feedback of Abnormal Situation			
Cause Analysis and Solution	(This part should be filled by the manufacturer.)		
Note			

Shenzhen QLS Electronic Technology Co., Ltd (QLS-HiFi)

Address: Room A1502,NiuLanQian Building,MinZhi Road,LongHua Town,ShenZhen, China 518131

Contact: Chen Xue Qian (Clark)

Email：cxqmcu@tom.com

附录 1 产品保修卡

产品出现故障时，请认真填好本表，并撕下与产品一起交给我们。

产品名称	QA100 数字功放	产品序列号	
购机日期	年 月 日		
用户名称		邮政编码	
固话号码		手机号码	
详细地址			
不良现象反馈			
原因分析及处理结果	（本部分由厂家填写）		
备注			

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