PRD-3
Preamplifier/DAC

User Manual

Contents

Don't be a stranger

Thank you for purchasing the Gato Audio PRD-3. We are absolutely confident that it will bring you many hours of listening pleasure.

We hereby cordially invite you to join the Gato Audio family by registering your product online. You may also consider signing up for our newsletter to receive information about exciting new products, events and technical updates.

All this and more on www.gato-audio.com

Our very best,

Gato Audio

Package contents

Please check that the following is included in the package:

- 1 Gato Audio PRE-3 preamplifier
- 1 mains cable
- 1 Gato Audio RC-2 remote control
- 1 CR2032 3 V battery
- 1 CD-ROM with USB driver for Windows
- This manual - which you should be reading now ☺

Safety first!

Mains plug and cable:
- Insert the mains plug fully into the mains outlet socket
- Do not use any mains cable other than the one provided with this preamplifier
- Do not defeat the ground connection
- Do not move the preamplifier around while it is connected to mains
- Do not place heavy objects on the mains cable or place the cable near high-temperature objects
- Do not use damaged mains plugs or socket outlets

Liquids:
Electricity and liquids are not a safe combination, therefore:
- When cleaning the preamplifier, remove the mains plug
- Do not handle the mains plug with wet hands
- Do not spray any liquid directly onto the preamplifier
- Do not place liquid containers above or near the preamplifier
- Keep liquids away from the preamplifier

…And:
- This is not a toy and should not be handled like one (by children OR adults)
- Do not remove the covers of the preamplifier (for service see page 14)
- Do not attempt to put foreign objects inside the preamplifier (for service see page 14)
- Do not cover the preamplifier with cloth
- Do not place the preamplifier on sloped or unstable surfaces
- When the preamplifier will not be used for a long time, remove the mains plug
- Never connect or disconnect cables when the preamplifier is switched on
- This unit is made for indoor temperature (15-25° C or 59-77 ^{O}F). If it has been exposed to cold temperature, let it adjust itself to indoor temperature before use
- Make sure that your preamplifier is able to breathe by securing a minimum safe distance around the heat sinks of 100 mm or 4 inches
- The preamplifier can get hot during use. Normal operating temperature is from room temperature to 50° C or 122° F

About the preamplifier

General design
The Gato Audio PRD-3 preamplifier is designed and built to a vision of combining technology, sonic performance, connectivity, versatility, stunning looks and compact design. It features a built-in D/A converter with electrical, optical and USB inputs. High quality analogue input is via RCA connectors or via XLR connectors for true balanced signals. Unbalanced and a double pair of balanced line outputs are provided. The PRD-3 features low noise analogue circuitry, true 24bit/192Khz conversion, upsampling of the lesser quality and a very clean internal clock generator for ultra low jitter in the digital domain. The PRD-3 preamplifier is well suited for use together with active speakers, power amplifiers or as a high quality DAC.

Analogue Input Stage
The analogue input stage is where everything begins. It not only connects external inputs and the built-in D/A converter with the output stage, it adapts impedances, adjusts levels and switches signals. A super-gentle embrace of the delicate analogue signals is important for the total performance of the preamplifier. At Gato Audio we have utilized our many years of experience in "voicing" analogue amplifiers to make this particular stage perform at its very best. We tuned the input stage to perform with a natural and lifelike sound, affecting the original signal as little as possible.

D/A Converter
The built-in D/A converter offers real high end performance, enabled by the use of a dedicated power supply, a balanced-driven Burr-Brown PCM1794 D/A converter, an optimized high bandwidth I/V converter, and an analogue stage with low-Q, low pass filters. All digital inputs are upsampled to 24bit/192kHz. This D/A converter will upgrade any digital source - such as wired or wireless streaming from your computer or CD drive - to a high end level of detail and musical performance.

USB Versatility
The true 24bit/192kHz digital input via the state of the art asynchronous USB circuit is especially worth highlighting. It enables the possibility of a sonic performance vastly above that of any CD. It is the key note of making this preamplifier a quality-enhancing connection point for your Mac, PC or even your iPad.

Connectivity
We had our eye on versatility and connectivity when designing this preamplifier. The PRD-3 offers not only a wide range of digital and analogue inputs, but also line outputs, a trigger signal for external power amplifiers, and a configurable home theater input. The HT input can turn the preamplifier into a fixed level preamplifier for use in a surround setup, without compromising the sonic performance.

LED Display
By choosing a large high contrast white LED dot matrix display, we gave the PRD-3 a distinct appearance, easy to understand, easy to see and operate – even at remote control distance. In addition to displaying output level and selected input, it also displays the sample rate of the digital input – revealing the quality. The LED display is fully dimmable by the remote control.
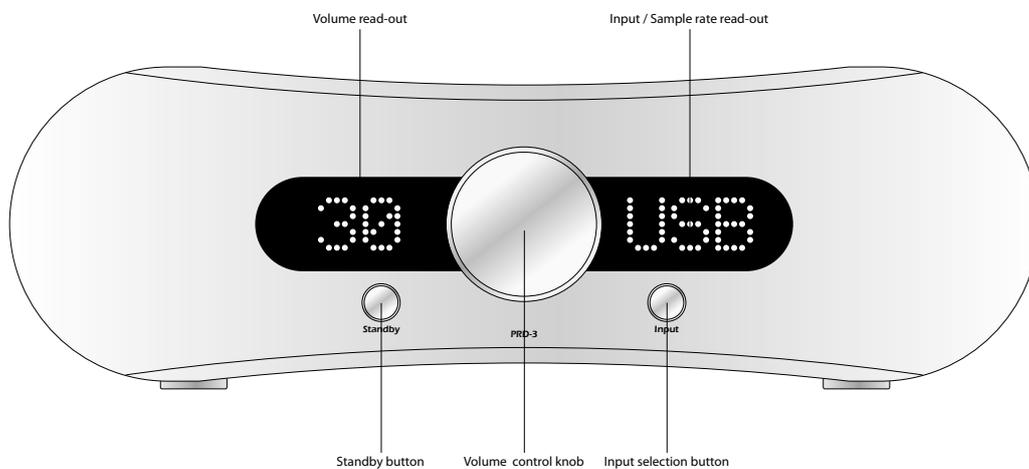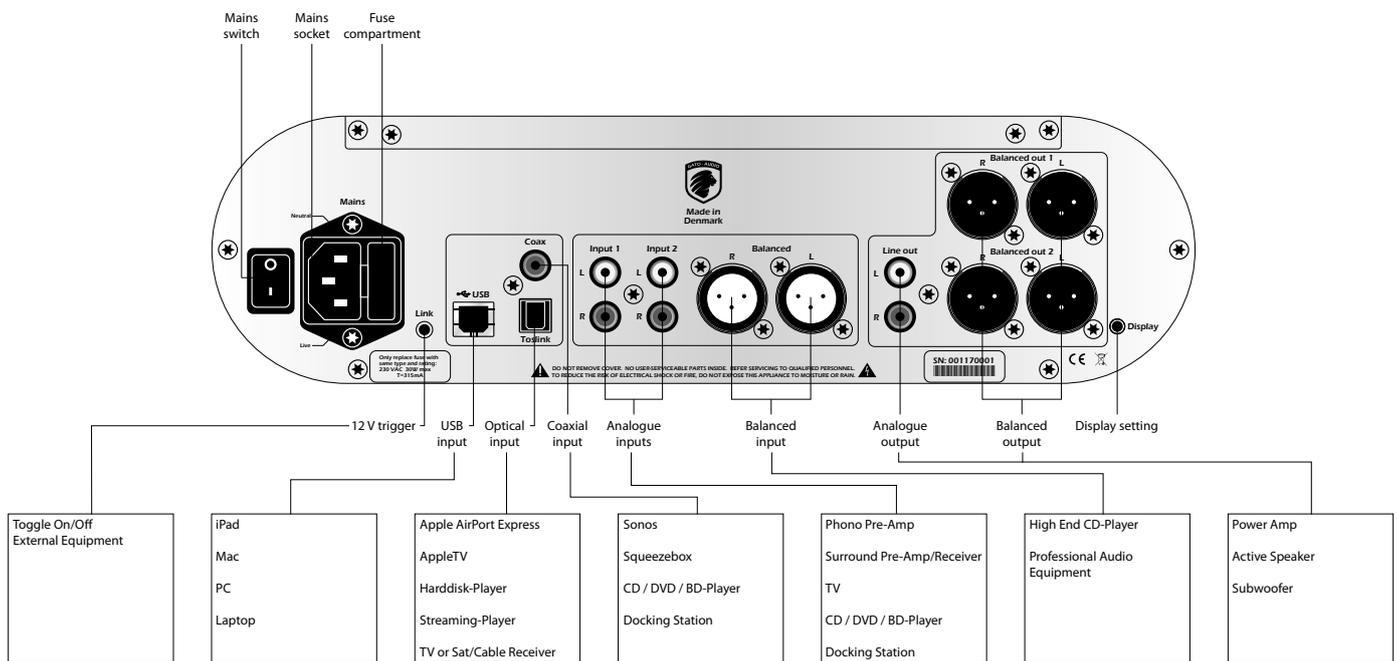
Setting up your preamplifier

Basic connection

Follow these steps for setting up your system in this sequence:

1. Place the PRD-3 as per the instructions on page 5

2. Connect all inputs and outputs to the preamplifier

3. Connect mains power cable to the preamplifier and turn it on

4. Select input and volume setting. Enjoy!

Overview

Connecting a computer to USB
Before connecting the PRD-3 to your computer via USB, please read installation instructions on page 11.

Connecting an Apple iPad to USB
It is possible to stream music from an iPad to the USB port of the PRD-3. An Apple Camera Connection Kit is required for this feature. The kit is available from the Apple online store or other Apple accessory shops.

Plug the camera connector into the iPad dock connector and connect it to the PRD-3 with a USB cable. Simply start your music app and enjoy the music.

How does it work?

Power on
Use the mains switch on the back of the preamplifier to turn it on. The preamplifier is now in standby mode. Only the microprocessor and the standby LED are powered during standby. Therefore, the PRD-3 has an ultra-low standby power consumption of less than 1W.

Standby
Activate the preamplifier by pressing ⏻ on the remote control or the Standby button on the front panel. When the preamplifier enters standby mode again it will remember the selected input channel and volume level. If the volume level is higher than 50, it will be reduced to 50 when the preamplifier exits standby mode.

Standby
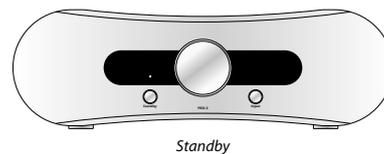
Adjusting the volume
Turning the volume control knob clockwise increases the volume. Turn it counter-clockwise to decrease the volume. The volume can also be adjusted by pressing the ✚ or ━ button on the remote control.

Muting
For complete silence simply press the 🔇 button on the remote control. Press the mute button once more to return to the previous volume level.

Mute
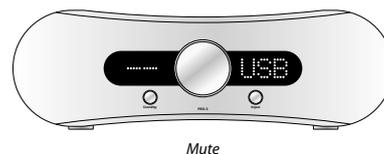
Input selection
Use the Input button on the front panel to select between the different input channels.
Inputs can also be selected with the remote by pressing the direct input selection buttons or the ▼ or ▲ buttons. The input will switch the channels in this order:

→IN1→IN2→BAL→USB→RCA→OPT⌐

Display dimming
The display can be dimmed by a pressing the Display button on the RC-2 remote control or the Display button on the back of the preamplifier. The display is now turned off except for two LEDs indicating the dimmed display state. Whenever a change is made to the settings of the preamplifier, such as adjusting volume or changing input, the display will light up for 4 seconds, showing the change that is being made. Press either of the buttons again to exit display dimming mode.

Display dim
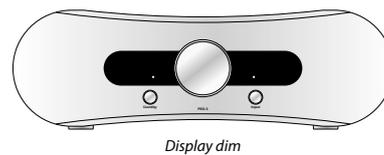
Sample rate read-out

No sample rate available

Sample rate read-out

The PRD-3 can read and display the sample rate of the USB, RCA and OPT digital input channels. The PRD-3 can be set to display this in two different ways:

1. The display on the right shows the selected input channel, eg. USB. Press the USB button on the RC-2 remote control, and the sample rate will be shown in kHz instead of selected input channel name for 4 seconds.

2. The display on the right only shows the sample rate. When changing input channels the channel name will be shown for 4 seconds, and then return to display the sample rate.

To toggle between the two read-out modes, press and hold the Display button on the back of the preamplifier for 2 seconds.

Home Theater direct

Direct

The Direct function bypasses the volume control turning this preamplifier into a fixed level preamplifier. This can be very useful in surround setups. To activate this mode, select input IN1 and press and hold the Input button on the front panel of the preamplifier for 4 seconds. The left display will read HT.

To disable the function, press and hold the Input button on the front panel of the preamplifier for 4 seconds. The preamplifier remembers this setting in standby mode and when the PRD-3 is switched off.

RC-2 remote control

The RC-2 is an infrared remote control for the Gato Audio PRD-3.

How to insert/replace the battery
The RC-2 runs on a standard CR2032 3 V button battery.

1. Remove the small lid on the bottom side of the remote

2. Insert or replace the CR2032 3 V button battery

3. Reinstall the small lid on the bottom side of the remote

Functions

Standby ⏻   - Press the button to put the preamplifier in standby
         Press it again to turn it on

Display   - Press the button to dim the display
         Press it again to restore the display to normal

Mute   - Press the button to mute the preamplifier
         Press it again to return to the previous volume level

USB   - Press the button to select the digital USB input channel

RCA   - Press the button to select the digital coaxial input channel

Optical   - Press the button to select the digital optical input channel

Input 1   - Press the button to select the analogue Input 1 channel

Input 2   - Press the button to select the analogue Input 2 channel

Balanced   - Press the button to select the analogue balanced input channel

Volume up +   - Press the button to increase the volume

Volume down —   - Press the button to decrease the volume

Next input channel ▲   - Press the button to select next input channel

Previous input channel ▼   - Press the button to select previous input channel
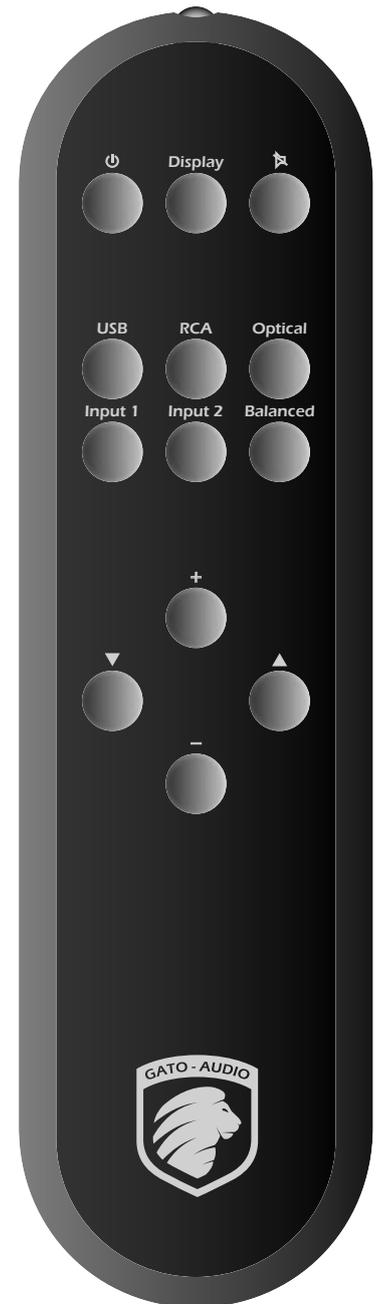
Installing USB Driver

Requirements

Minimum computer configuration required for USB audio streaming:

- Intel Core 2 @ 1.6 GHz, or AMD equivalent with 1 GB RAM

- USB 2.0 interface

- One of the following operating systems:

  - Windows XP with SP3 (32 bit)

  - Windows Vista with SP2 (32 bit & 64 bit)

  - Windows 7 & 8 (32 bit & 64 bit)

  - Apple OS X 10.6.4 (Snow Leopard) or higher

Because there are so many PC configurations out there, we cannot guarantee that you will be able to stream audio on USB even if your system meets the requirements above.

Windows PC Installation and Set-Up

Before you are able to stream audio from USB on your Windows PC the first time, you will have to install the Gato Audio USB driver.

Connect your PRD-3 to a free USB port on your computer and load the CD-ROM that came with the PRD-3 into your PC. Setup will start automatically - If not, click on **Start ⇨ Computer**. Right-click on the icon of your CD/DVD drive and choose **Install program**.
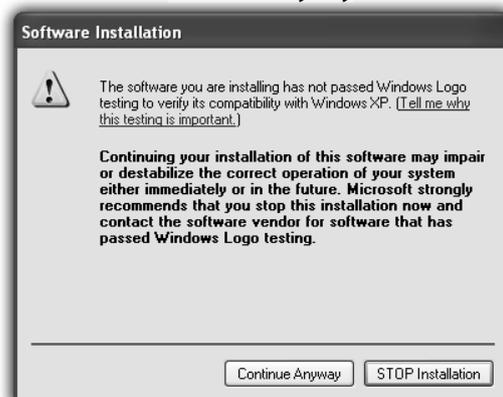
Click **Next** to start installation

Choose your prefered destination for the installation and click **Install**
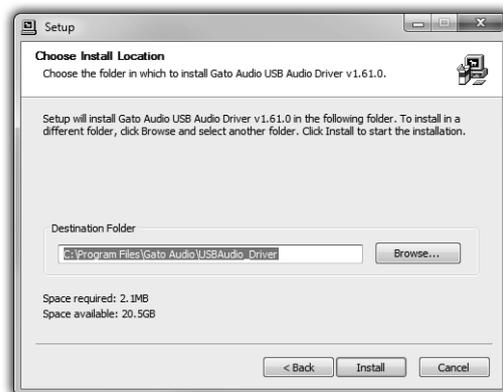
Click **Finish** to complete the installation

During the installation process on Windows XP, you may see this message. Please just click **Continue anyway**
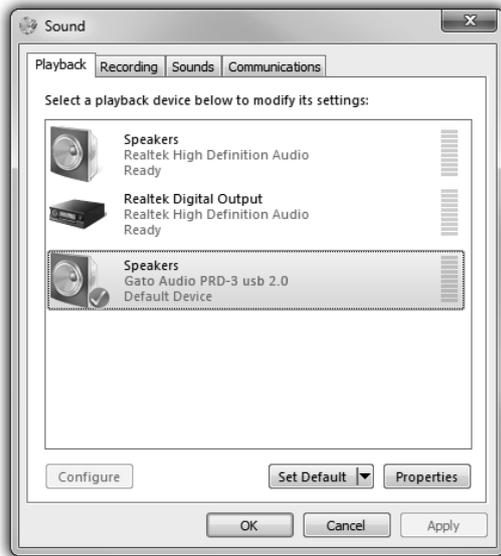
After the installation, follow these steps to setup Windows to stream to your Gato Audio device:
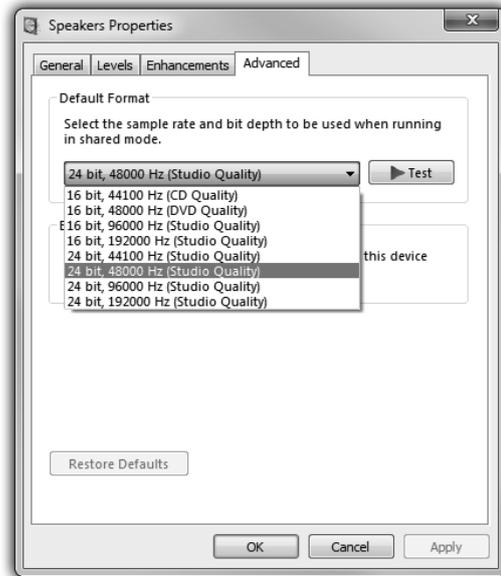

Click **Start** ➯ open **Control panel** ➯ Select **Hardware & sound** ➯ click on **Sound**

Select **Gato Audio PRD-3** as
playback device and click **Set Default**

To adjust output format, click **Properties** and
select the **Advanced** tab



Mac Installation and Set-Up
No driver installation is needed on the Mac. The driver will be installed automatically when the PRD-3 is connected to your Mac for the first time.

To set up your Mac to stream audio to the PRD-3:

Open **Finder** ➯ Choose **Utilities** ➯ Open **Audio MIDI setup**

In Audio MIDI setup select the **Gato Audio USB 2.0** device and then choose **Use this device for sound output**. Set your prefered sample rate and bit resolution at **Format.**
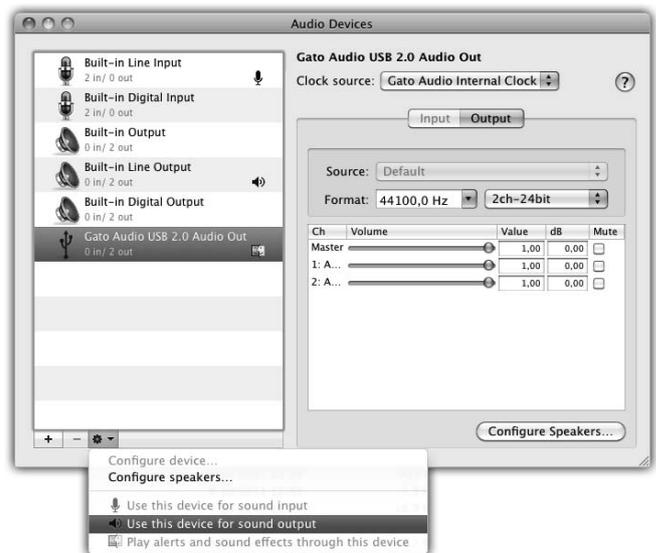
USB audio troubleshooting

USB audio devices have stronger requirements for both USB hardware and software than other USB devices. The following section describes the most common issues that may rise and their possible solutions.

Known hardware issues and possible solutions

A faulty hardware component, e.g. USB cable or USB port, may not have an impact on standard USB devices such as a FLASH drive or a printer but can be catastrophic for a USB audio device.

- **USB cables**
  Quite often, the USB cable (or its connectors) is the cause for USB signal distortions. Some cables available in the market are not suited for USB 2.0 high-speed communication (480 Mbps). Also the maximum allowed cable length of 5 meters should not be exceeded. Try using a different cable. Try a shorter cable (less than 2 meters). Stay away from special USB cable offerings optimized for audio, or cables which include additional functionality such as status LEDs.

- **PCB mounted USB ports**
  On some PC main boards (or laptops) signal quality of some USB ports is insufficient for USB audio streaming. The cause could be that on the PCB USB signals are routed close to a switching voltage regulator, for example. Try using a different USB port to connect the audio device.

- **USB hubs and front panel mounted USB ports**
  External USB hubs and ports (mounted on a front panel or elsewhere in the PC case) are a possible source of USB signal distortion. Quality of cables or connectors used to connect the external USB port with the main board could be insufficient, or internal cables are placed close to the power supply or other sources of electrical noise. Try using a USB port that is mounted directly on the main board.

Known software issues and possible solutions

Due to the real-time nature of USB audio streams there are also requirements for the operating system and third party software components installed on the system. Software components that make real-time behavior of the operating system worse are not compatible with audio streaming applications in general.

- **Conflicting drivers**
  Generally it can be stated that the set of device drivers that ships with Windows behaves well. If problems occur then they are typically caused by third party drivers that are to be installed for hardware which Windows does not support by default. So if a hardware component is supported by an in-box driver then this driver is to be preferred and a third party driver should not be installed.

- **W-LAN or Ethernet device drivers**
  Quite often it can be observed that device drivers for W-LAN adapters monopolize the computers CPU causing clicks and drop outs when streaming audio to USB. A few Ethernet drivers also have such issues. Try to find an updated W-LAN driver, or try an older version of the driver. If no suited driver can be found, disable W-LAN (or Ethernet) while audio streaming is running.

- **Virus scanners or personal firewall software**
  Normally, this kind of software includes some components to perform filtering or scanning work in the computers CPU. Often, such components keep the CPU busy for long periods which can cause clicks and drop outs when streaming audio to USB. Try to pause or disable the software while streaming audio to USB. Try uninstall the software and use a different product with similar functionality.

Make it last!

Please apply simple common sense to maintain the sound quality and lifespan of your new Gato Audio preamplifier. Here are a few guidelines:

- Regular care: wipe the surfaces carefully by using a clean soft dry cloth

- Cleaning: if necessary, wipe the hard surfaces clean using a soft cloth dampened only with clean water.

- Grease stains or finger marks can be removed carefully with a clean soft cloth lightly dampened in a mix of clean lukewarm water and a single drop of dish-washing liquid. Then wipe the surfaces dry using a soft dry cloth

- Be careful never to use hot water or any type of concentrated detergent, solvent, thinner, or any other volatile substance on the surfaces, or you may cause permanent damage to the surface coating

- Keep the cabinet away from prolonged contact with rubber or PVC materials

- Do not expose the preamplifier to direct sunlight or other heat sources

If all else fails...

…don't panic! Every Gato Audio product comes with a minimum 2-year warranty. See our website for details.

This warranty does not cover damage or wear directly or indirectly caused by improper use, violence, tampering with or unauthorized access to or servicing of any part of the product.

If you are in need of service or repair, please do not hesitate to contact us at hello@gato-audio.com or visit our website www.gato-audio.com for more information.

Technical specifications

Frequency response	20 Hz-100 kHz - 0.5 dB
Signal to noise ratio	> 110 dB
Line out maximum level	13 V balanced, 6,5 V unbalanced
Total Harmonic Distortion	< 0,001 % pre out
Input impedance	20 kΩ RCA or 40 kΩ Balanced
Line output impedance	75 Ω
Voltage gain	10 dB

Connectors

Balanced analogue inputs	1 pair gold plated XLR Neutrik
Unbalanced analogue inputs	2 pairs of gold plated RCA stereo
Digital inputs	1 USB type B, 1 Toslink, 1 RCA coaxial
Balanced analogue outputs	2 pairs gold plated XLR Neutrik
Unbalanced analogue outputs	1 pair of gold plated RCA Stereo
Trigger, 12 V	1 mini jack

Size & Power

Power Requirements	115 VAC or 230 VAC, 50 Hz/60 Hz, 30W max
Fuse	20 mm, 630 mAT@115 VAC, 315 mAT@230 VAC
Power consumption stdb/idle/max	< 1W/14W/30W
Dimensions (WxHxD)	325 x 105 x 420 mm / 12.8 x 4.1 x 16.5"
Weight	7 kg / 15.4 lb

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