exaSound

Gamma Music Server

Owner's Manual

PLEASE READ BEFORE OPERATION

REV. 1.0.0f – 12/2020

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Welcome

Thank you for purchasing the exaSound Gamma Music Server!

It offers the highest digital audio resolution, comprehensive feature set and choice of easy to use and advanced configurations. Roon Core and Roon Ready bring the best playback and library management experience. Support for proprietary and open source audio streaming technologies makes the Gamma Music Server the central digital hub in your audio system.

We hope that the exaSound Gamma Music Server will help you to enjoy world-class music experience for years to come. Please take a few minutes to read right through this manual. Investing a little time now is the best way to ensure that you will make the most of your investment.

Your satisfaction is our highest priority.

Happy listening,

exaSound Audio Design
www.exaSound.com
CustomerService@exaSound.com

Safety Information

Explanation of Graphical Symbols

⚡	The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
⚠	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the Device.

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plug, receptacle, and the point where it exits from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.

Precautions

- Before connecting the AC power adapter cord to the device, make sure the voltage designation of the power adapter corresponds to the local electrical supply. If you are unsure of your power supply, contact your local power company. The acceptable power input range is AC ~ 100V-240V, 50/60Hz

- The device is still receiving power from the AC power source as long as it is connected to the wall outlet, even if the device itself has been turned off.
- Unplug the power adapter if you are not going to use the device for an extended period of time. Hold the power adapter when unplugging. Do not pull on the cord.
- The power adapter is used as the mechanism for cutting off power, therefore make sure it is easy to unplug.
- To ensure proper ventilation around this product, do not place this product on a sofa, bed or rug.
- High temperature will lead to abnormal operation of this device. Do not expose this device or batteries to direct sunlight or near heating objects.
- When moving the device from a cold location to a warm one, or vice versa, moisture may condense on components inside the device. Should this occur, the device may not operate properly. In such a case please turn the device off for 1-2 hours to facilitate moisture evaporation.

⚠	**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS DEVICE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES MAY BE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY. THE DEVICE SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES SHALL BE PLACED ON THE APPARATUS.
⚠	**WARNING:** CHANGES OR MODIFICATIONS NOT AUTHORIZED BY THE MANUFACTURER CAN INVALIDATE THE COMPLIANCE TO REGULATIONS AND CAUSE THE UNIT TO BE NO MORE SUITABLE TO USE. THE MANUFACTURER REFUSES EVERY RESPONSIBILITY REGARDING DAMAGES TO PEOPLE OR THINGS DUE TO THE USE OF A UNIT WHICH HAS BEEN SUBJECT TO UNAUTHORIZED MODIFICATIONS OR TO MISUSE OR TO MALFUNCTION OF A UNIT WHICH HAS BEEN SUBJECT TO UNAUTHORIZED MODIFICATIONS.
FCC Statement	This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient or relocate the receiving antenna. • Increase the separation between the equipment and receiver. • Consult the dealer or an experienced radio/TV technician for help. Any unauthorized changes or modifications to this equipment would void the user's authority to operate this device. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
CE	This unit is compliant with Directive 2011/65/EC (RoHS) Restriction on Hazardous Substances,

	and is in conformity with the provisions of the EMC Directive 2004/108/EC. The following harmonized standards were applied: EN55022:2010/AC:2011 Class B EN61000-3-2:2006/A1:2009 and /A2:2009, EN61000-3-3:2008 EN55024:2010 (IEC 61000-4-2:2008, IEC 61000-4-3-2006/A1:2007/A2:2010, IEC 61000-4-4:2004/A1:2010 , IEC 61000-4-5:2006, IEC 61000-4-6:2008, IEC 61000-4-8:2009, IEC 61000-4-11:2004) 1999/5/ec - Radio and telecommunication Terminal Equipment Device (R&TTE) EN 60950-1, EN62311 - For Article 3.1(a): Health and safety of the user EN 301 489-1, EN 301 489-17 - For Article 3.1(b): Electromagnetic Compatibility EN 300 328, - EN 301 893 - For Article 3.2: Effective use of spectrum allocated
	This product, when no longer usable, when disposed off can't be treated as generic garbage, but must be disposed of at a collection point for recycling of electrical and electronic equipment, in compliance with the WEEE regulation (Waste of Electrical and Electronic Equipment). By making sure that this unit is correctly recycled, you will help preventing potential damages to environment and human health, which could be caused by the incorrect treatment of this product as generic garbage. Materials recycling helps conserve natural resources.
	We use our best efforts to ensure that information in this document is complete, accurate and current, but otherwise we make no representation concerning the same. We reserve the right to change or modify the information any time, without prior advice. It's up to the customer to ensure that the manual being consulted is the latest version.
Trade marks	▪ ZeroJitter™, GalvanicInfinity™, ENclusiv™, FemtoMaster™ and ZeroResolutionLoss™ are trademarks of exaSound Audio Design. ▪ Direct Stream Digital (DSD) is a trademark of Sony Corporation. ▪ Roon and Roon Ready and the Roon Labs logo are trademarks or registered trademarks of Roon Labs or Roon Labs's licensors. ▪ The MQA logo is a trade mark of MQA Limited. © MQA Limited 2018 ▪ Designed for Windows Media, Microsoft, HDCD, and the HDCD logo are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. ▪ Apple, Mac, AirPlay, iOS and OS X are trademarks of Apple, Inc. ▪ All other trademarks are the properties of their respective owners.

Package Contents

The following items should be in the box:
- exaSound Gamma Music Server
- Power Supply
- Quick Start Guide

19 Volt Power Supply Warning

⚠	**Warning**: The exaSound Gamma Music Server is powered by external 19 Volt power supply. Don't connect the 19 Volt barrel connector of the power supply to DACs or other devices rated for 12Volt power sources. Doing so will most likely destroy the 12 Volt device. The 19Volt barrel connector of the Gamma Music Server power supply is clearly marked with a label indicating the voltage and the intended use.

Proper Device Placement

Place the device on a stable solid base, far from heat sources. Do not expose the device to direct sunlight. Allow at least 2.5 cm (1'') around the device for ventilation. Do not place the device on fabrics, inside enclosed space, or in contact with curtains. Do not place the device on top of power amplifiers or any other equipment that emits heat. Do not expose the unit to smoke, humidity, moisture and water.

Overview

The exaSound Gamma Music Server is a reference-quality Roon Core Server and UPnP server.

The Roon Core manages your music collection, streams to your audio devices, and stores the Roon database on the Gamma Server system SSD drive. Music files can be stored on optional internal SSD storage, USB drives and NAS. Roon Core manages content from TIDAL and Qobuz and streams music to Roon Ready, AirPlay, Sonos, USB and many other audio devices. Playback is controlled by the Roon Remote app available on all platforms. Roon offers bit-perfect playback or DSD / PCM upsampling, stereo and multichannel playback.

The built-in UPnP Server can stream music files stored on optional internal SSD storage or attached USB drives. Compatible player apps include MconnectHD, BubbleUPnP, Hi-Fi Cast and many other.

The exaSound Gamma can serve a double duty as server and player/renderer when a DAC is attached via USB.

exaSound Gamma Music Server supports most high-resolution PCM music formats including FLAC, AIFF, WAV, as well as DSD formats including DSF and DFF. Gamma Music Server offers ENclusiv™ High Resolution Audio (HRA) support: PCM sampling rates up to 384kHz at 32bit resolution and DSD up to DSD512.

For most applications the exaSound Gamma Music Server can be used without any configuration. (You still need to configure Roon or your UPnP app). Customization and configuration options are managed via a Web browser.

exaSound Gamma Music Server is a multi-level device. It can be used in simple and most-advanced network configurations.

With features like remote upgrades and remote support, the Gamma Music Server is future-proof and backed by the exceptional exaSound customer service.

Integration with exaSound DACs
Unique asynchronous packet streaming over USB developed by exaSound guarantees that CPU load cased by multiple server tasks does not affect the timing accuracy and precision of playback when an exaSound DAC is attached to the Gamma Server via USB. In this configuration the Gamma Music Server is a certified RoonReady player.

Front and Rear Plates

Power Button

Power Light

USB 3.0 Connectors

exaSound V
Gamma Music Server
Made in Canada
HDMI 1
USB
LAN
HDMI 2
19Vdc 3.4A
roon core
UPnP
NAA

HDMI Connector 1
(Reserved for future use)

Ethernet RJ45
Connector
(Home Network)

Power Adapter
Connector

HDMI Connector 2
Display for the WEB user
interface
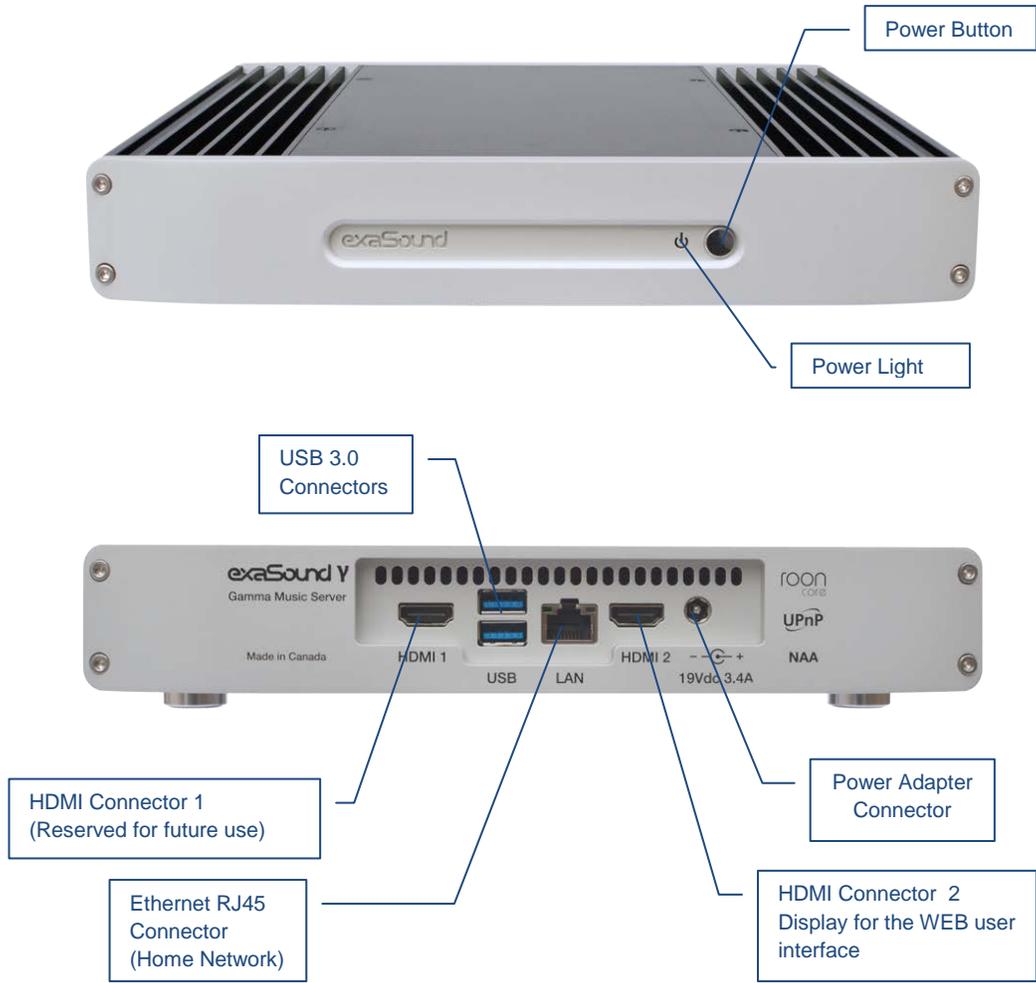
Quick Start Guide

1. Connect the power adapter to the mains and to the Gamma Music Server.
2. **Note:** The Gamma Server uses 19 Volt power adapter. The power adapter and the power cable are clearly labeled. **Do not plug-in the Gamma Server power cable to any devices rated for 12 Volt power supply. This may result in permanent damage**.
3. Connect the Gamma Music Server to your Gigabit home network router or switch with an Ethernet cable.
4. Press the Gamma Music Server power button, the power indicator light will illuminate.
5. In about 30 seconds to a minute the Gamma Music Server will be available on the home network for use with apps like Roon Remote, HQPayer, MconnectHD, Bubble UPnP, Hi-Fi Cast, Kazoo, and with AirPlay.
6. For most applications the Gamma Music Server is ready to be used right out of the box. Custom configuration options are available via Web User Interface by using a web browser and navigating to gamma.local.
7. Alternatively, you can access the configuration user interface by connecting a monitor, keyboard and mouse to the Gamma Music Server.

Roon Core Server

Roon offers engaging, enjoyable way to browse your music. Via intelligent automatic cloud service library management, Roon delivers metadata for the user's library and frees the user from the complexities of library management. Here is how it works:

- Roon is a subscription service. You can find out more about the trial period and about subscription plans on the Roon website - RoonLabs.com.
- To use Roon you need to have an Internet connection.
- Roon provides access to the Tidal and Qobuz online streaming services.
- Your music files can be stored on USB disks connected to the Gamma Music Server, on a NAS (Network Attached Storage) or on optional internal SSD drive.
- Playback is controlled by the Roon Remote App. Roon Remote is available for Apple iPhones, iPads and Android devices. You need to install it on your device from the Apple App Store or from Google Play. Playback can also be controlled from PC or Mac.
- Roon Core connects to the Roon Service to retrieve rich and well organized information about your music files.
- The Roon Remote app can transparently discover and connect to the Roon Core on the Gamma Music Server.

You can find more information about Roon here: How Roon works. Questions about Roon can be posted on the Roon Community forum.

Configuring the exaSound Gamma Music Server with Roon

1. The easiest way to start with Roon is to stream music from Tidal or Qobuz. You will have the option to enter user names and passwords for your accounts with the streaming services when you start Roon for the first time. Subscriptions accounts can also be configured from the Roon Settings menu.
2. You can store some music files on a USB disk and connect it to the Gamma Server. Check the advanced configuration instructions for coping files to the Gamma Music Server over the home network. You can also use music files stored on NAS drives.
3. Open the Roon Remote app and connect to the Gamma music Server.
4. Follow the instructions for configuring the Roon Core. You can change the configuration options at any time from the **Settings** menu.
5. Roon Remote will prompt you to provide the location for your music files.
6. Next you will be prompted to select your playback devices. You will see a list of Roon Ready and other compatible networked audio devices available on your home network.
8. DACs connected via USB to the Gamma server will appear in the zone list as **Connected to Core.**
9. exaSound DAC connected via USB to the Gamma Server You will be available to Roon as a Roon Ready networked device.
   Note: An exaSond DAC will also be listed as an AirPlay zone. Don't use the exaSound Airplay zone, the Roon Ready exaSound zone will provide much better sound quality.
10. When you complete the initial setup wizard, select your audio zone from the link at the bottom of the Roon Remote window.

UPnP /OpenHome Audio Library Server and Renderer

The Gamma Music Server supports the UPnP/OpenHome audio streaming standards and has a built-in UPnP audio library server. Playback can be controlled remotely with an app from an iPad, iPhone, Android device, PC or Mac. Popular control apps include Bubble UPnP and Hi-Fi Cast for Android devices and MconnectHD, Kazoo, Lumin and others for iPads and iPhones. There are many other third-party UPnP /OpenHome control apps. The ones listed here are tested with the Gamma Music Server and support all high-resolution formats and sampling rates up to DSD512 for stereo and multichannel sources.

The exaSound Gamma can serve a double duty as UPnP server and player/renderer when a DAC is attached via USB.

Configuring the exaSound Gamma Music Server with UPnP

1. The easiest way to start using the UPnP server is to store some music files on a USB disk and to connect it to the Gamma Server. Check the advanced configuration instructions for coping files to the Gamma Music Server over the home network.
2. Use an UPnP app like MconnectHD of Bubble UPnP to control playback.

3. Configure your UPnP app for use with streaming services like Tidal and Qobuz.
4. Use a Web browser to open the Gamma Music Server Web User Interface. By default the address is
   gamma.local.
5. In the menu on the left select Settings.
6. On the UPnP music Library tab tap on the **Update** button. Library update can take a while.
7. Configure your UPnP app to use the Gamma Music Server as music library. It will appear in the list of
   available music libraries as **gamma Library**.
8. Connect your UPnP app to a UPnP playback device, or renderer.

If you have a USB DAC attached to the Gamma Music server, you can use it as playback device. It will
appear in the list of available UPnP players as **gamma**.

Network Audio Adapter for HQPlayer

When a DAC is connected via USB to the exaSound Gamma Music Server, it becomes a Network Audio
Adapter (NAA) player for use with HQPlayer. The Signalyst HQPlayer offers advanced upsampling and
PCM to DSD conversion algorithms. Follow the Step-by-step guide for configuring the exaSound
Streamers and Servers for use with *HQPlayer*.

AirPlay Player

AirPlay is a popular and convenient network media streaming technology. AirPlay can be used to stream
content from online services like Spotify, Tidal and Qobuz to the Gamma Music Server. This feature is
available with USB-attached DACs.

AirPlay support is implemented with ShairPort, an open-source Linux emulator for Airplay. Since this is
not an official Airplay implementation, reliability may vary. Note that the AirPlay protocol has some
limitations compared to the other network streaming technologies available with the Gamma Music
Server. It supports stereo CD-quality audio. DSD and high-sampling rate/high-resolution PCM are not
supported.

Using exaSound Gamma Music Server with AirPlay
1. Pull up from the bottom edge of the iPad screen
2. Tap the sound wave icon in the upper right corner of the audio player box.
3. A list of Airplay compatible devices will appear.
4. Select **gamma**. You will see a checkmark next to it.

Gamma Music Server Network Configuration

Usual applications of the Gamma Music Server don't require any manual setup. A Gigabit Ethernet network is required for seamless playback at high sampling rates. DHCP must be enabled on your router.

See the Web User Interface section below for instructions how to setup manual IP address for the Gamma Music Server.

Changing USB Connections

Always power down the Gamma Music Server before connecting or disconnecting DACs and USB storage devices like hard drives and flash drives.

Only one DAC can be attached to the Gamma Music Server at any time. Making a USB connection with more than one DAC can cause unexpected behavior.

You can attach up to eight USB hard drives using a powered USB hub.

Web User Interface

Custom network configuration and other settings are available via a web page hosted on the Gamma Music Server. To access it, open a web browser and in the navigation bar enter ***gamma.local***

Computers running Windows 10, Mac computers, mobile phones and tablets will discover automatically your exaSound Gamma Music Server. If your Windows computer is running an older version of Windows or it is unable to find the Gamma Music Server, you need to install Apple Bonjour or compatible zero-configuration networking (zeroconf) service. On Linux computers you need to install Avahi.

If you change the name of the Gamma Music Server the web address will change. For example if you rename it to ***exaSound-zone1***, the address will be ***exaSound-zone1.local***

 Another way to access the settings web page is to connect a keyboard, mouse and HDMI monitor to the HDMI2 port of the Gamma Music Server. This is useful when you don't have access to the Gamma Music Server over the network.

When you connect to the Gamma Music Server with a Web browser you will see the following page:
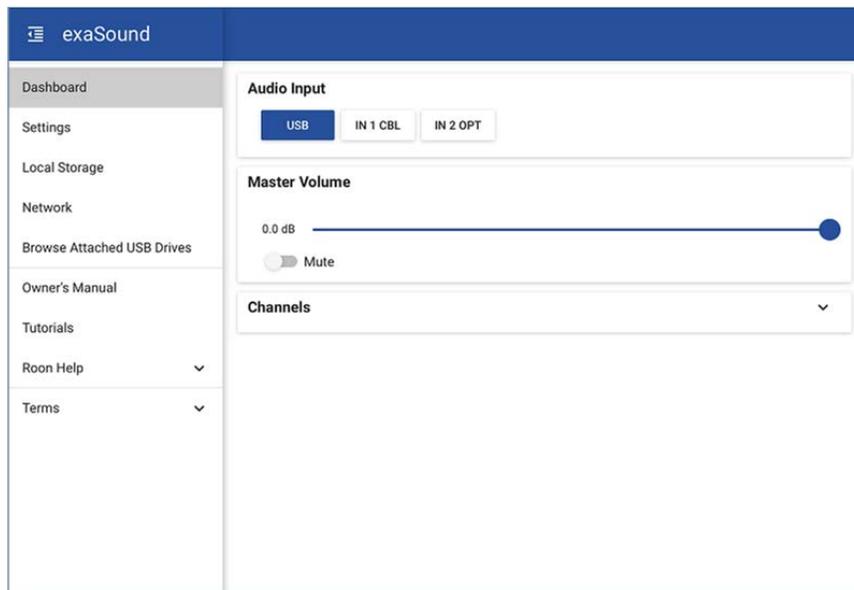
Working with the Menu

☰ If you are using a device with small screen you can tap on the menu icon to hide the menu. The menu will slide out.
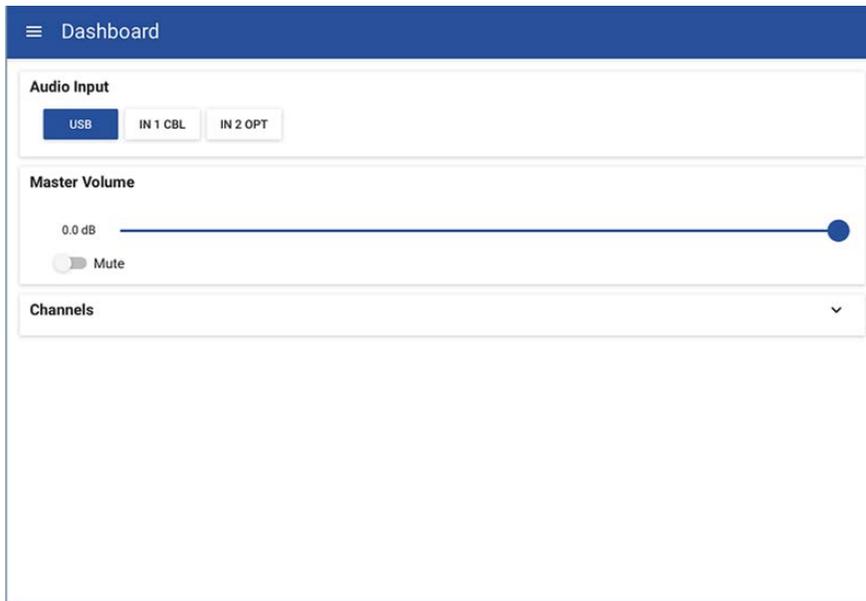
You can toggle between Auto-Hide and Always-On menu modes by tapping on the menu icon.

To have the menu visible at all times tap on the menu icon until you see it overlaid with a right arrow.

Ethernet Connection with Manual IP Address

Navigate your web browser to the Gamma Music Server Web Interface. Open the menu and select the **Network** page.
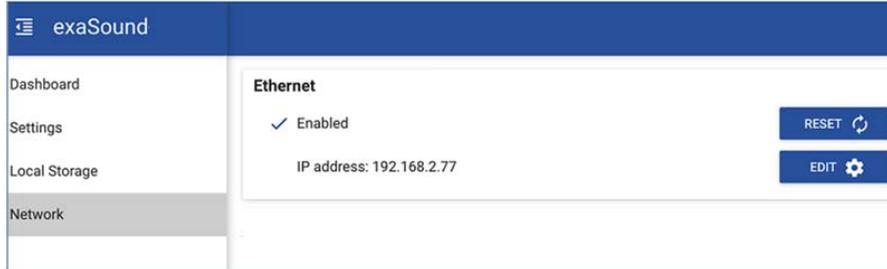
You can use the Reset button to re-initialize the network connection if the settings on your router are changed or in case the connection is lost.

1. Locate the **Ethernet** tab and tap on the **Edit** button.

2. Select **Manual IP**. Enter proper IP address, subnet mask and gateway. Press apply when you are ready.
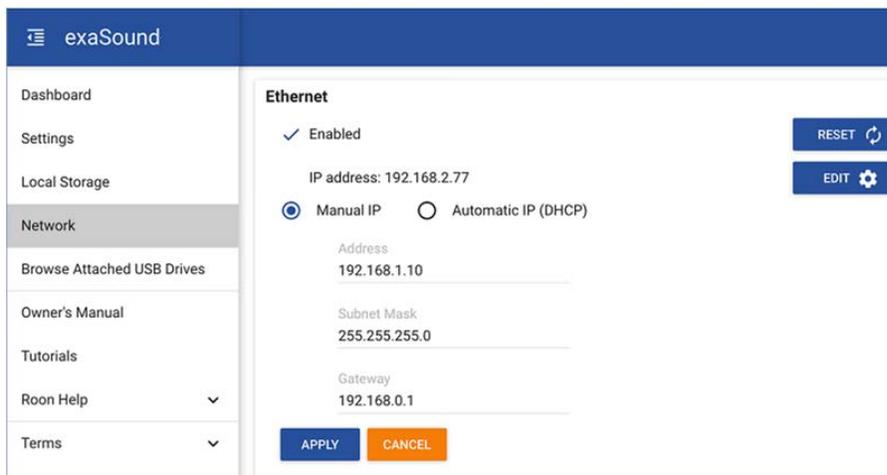
3. It will take a moment for the new settings to be activated. You will see a Waiting for Connection message.

> ⟳ Waiting for connection...

4. When the Network page reappears you should see the new IP address.

⚠	Note that if you use an IP address to connect your Web browser to the Gamma Music Server, the browser won't be able to reconnect automatically. In this case you will need to manually enter the new Gamma Music Server IP address in the navigation bar of the Web browser.
⚠	If you enter incorrect network settings you may be unable to connect to the Gamma Music Server over the network. In this case you can use an alternative method to access the web user interface. Connect a keyboard, mouse and HDMI display to the HDMI 2 port of the Gamma Music Server. Use the **Network** page to correct the network settings or to restore the automatic (DHCP) network configuration.

Sharing Attached USB Drives and Internal SSD Drives on the Network

File Sharing allows access via the home network to the optional internal SSD drives and USB drives attached to the Gamma Music Server. You can use file management apps like Windows Explorer and the Mac OS Finder to copy, move and erase files located on the Gamma Music Server drives.

- Use the *File Sharing* tab on the *Local Storage* page to enable or disable file sharing and to set the password for accessing the Gamma Music Server file shares.
- The username is *playpoint*
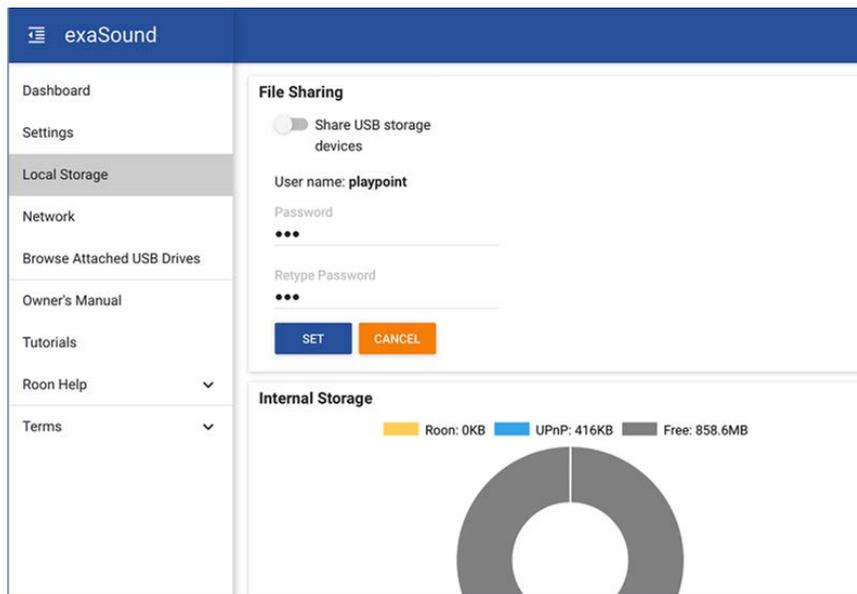
The Storage tab displays information about the size of the music libraries and the free space on the SSD, HDD and USB storage devices.

⚠	Make sure that there always is at least 20% free space on the Gamma Music Server system SSD drive.
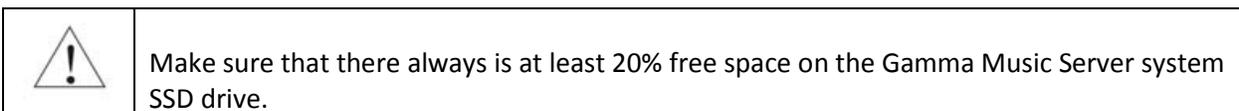
The *USB Storage Devices* tab on the **Local Storage** page displays list of attached USB drives.
To safely disconnect an USB drive from the Gamma Music Server:
- Close any applications on remote computers that may be using files on the Gamma Music Server drives.
- Tap the Eject icon ⏏ to the right of the USB drive that you want to disconnect.
- If the USB drive is in use an error message will be displayed at the lower edge of the screen.
- If you are unable to eject the drive and continue to get error messages, power off the Gamma Music Server and then disconnect the USB drive.

| ⚠ | Always maintain a backup copy of your music files. |

| ⚠ | Never disconnect a USB drive during playback. |

| ⚠ | To avoid accidental data loss we recommend powering down the exaSound Gamma Music Server before disconnecting a USB drive. |

Settings Overview

Use the Settings tab of the web user interface to configure the Gamma Music Server. Some features are available only if a DAC is attached to the Gamma Music Server via USB.

- Maximum Volume Limit
- DAC Power off Timeout
- Updating the UPnP Music Library
- Changing the Gamma Music Server Device Name (Host Name)
- Displaying the model number, serial number and firmware version
- Checking for firmware updates and installing firmware updates
- Displaying the serial and model numbers of the attached DAC
- Enabling and disabling remote support

Availability of feature depends on the DAC in use.

Multi-room Configuration and Using a Custom Device Name

Each Gamma Music Server on your home network must have a unique name. Use the **Device Name** tab to assign custom device name (host name) to your Gamma Music Server.

1. From the menu navigate to **Settings.** The current host name will be displayed on the **Device Name** tab.
2. Tap on the Change button and enter a new host name.
3. The Gamma Music Server will shut-down and restart.
4. Remote control apps must be reconfigured to use the new host name.

   Example: if you change the device name to **zone1**, you will need to enter **zone1.local** in the navigation bar of your Web browser to access the Gamma Music Server web user interface.
   To access the shared drives from Windows Explorer or Mac Finder you will need to enter **\\zone1** or **smb://zone1**

DAC Power Off Timeout

This feature is available only if an exaSound DAC is attached to the Gamma Music Server via USB. The latest generation exaSound DACs can enter power-saving mode after a period of inactivity.
You can use the **DAC Power Off Timeout** tab to set the time-out period.

Moving the slider to the rightmost position disables the DAC automatic power off feature.

Firmware Update

1. Disconnect any USB hard drives or USB sticks from the Gamma Music Server. External USB storage devices may interfere with the update.
2. Make sure that the Gamma Music Server power supply is reliably connected.
3. Make sure the Gamma Music Server is connected to your home network and your Internet connection is stable.
4. Go to the Device Information Tab and tap the **Check for Updates** button.
5. If a new firmware version is available, tap **Update.**
6. You will see a progress indicator. Don't interrupt the power to the Gamma Music Server during the update or your device may become unusable.
7. The Gamma Music Server may reboot twice during an update.

Remote Support

Remote support connections are used by exaSound technical personnel for troubleshooting and collecting error logs and performance data. Remote connection is possible only when it is initiated by the Gamma Music Server owner by pressing the **Start/Stop** button on the *Remote Support* tab.

Establishing the connection may take up to 10 seconds.

Please email the displayed Support ID to the exaSound support representative.

Dashboard for Volume Control and Input Selection

The Dashboard window is used for volume control, volume trimming and input selection.

The volume control feature on the web interface is available only if a DAC is attached to the Gamma Music Server via USB. In this configuration the Gamma Server provides also the functionality of network player.

Here is a view of the Dashboard page for stereo DACs.
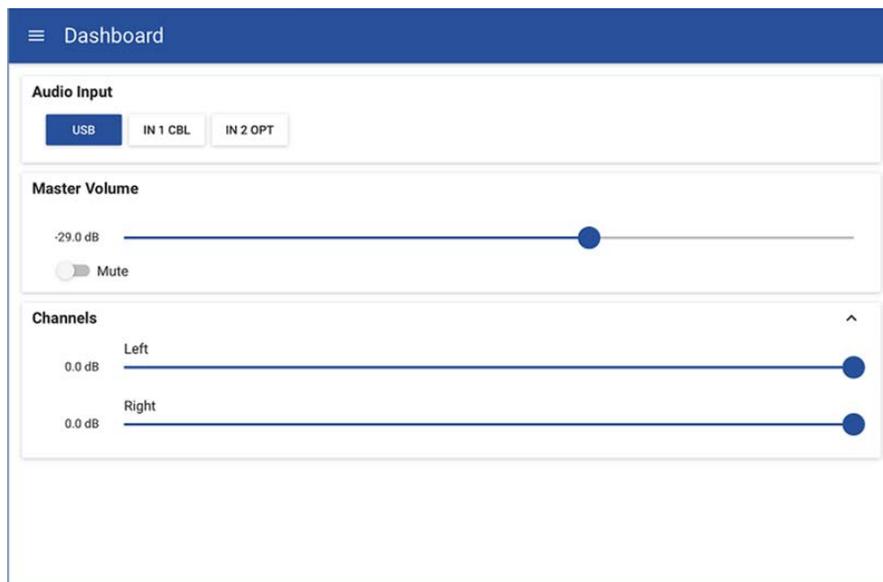
Web Dashboard, Channel Trimming View for Multichannel DACs
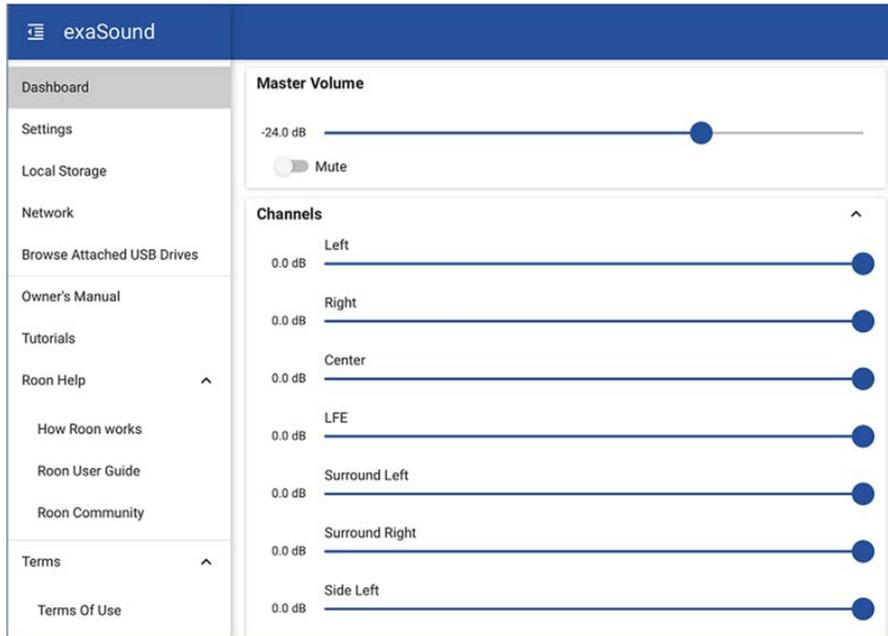
Volume Control with exaSound DACs

exaSound DACs feature ZeroResolutionLoss™ hardware volume control. Audio data is streamed at 0dB over the USB connection and volume control is implemented by the ES9018/ES9028PRO/ ES9038PRO DAC chips. This approach preserves the maximum possible signal to noise ratio. The volume level changes in steps of 0.5 dB.

Volume can be controlled in four ways:
- Remotely from iPad, iPhone or Android device. Compatible apps include Roon Remote, MconnectHD Kazoo, UPnP control points like Bubble UPnP and Hi-Fi Cast.
- From the Gamma Music Server web interface. You can control the master volume and trim the individual channels.
- From the volume control buttons on the DAC front panel.
- With the IR remote control supplied with your DAC.

The Gamma Music Server implements a unique 4-way volume synchronization. No matter which method is used to change the volume, all volume sliders and the indicators on the DAC display and the Gamma Music Server web interface are kept in sync.

The sound can be muted by touching the **Mute** switch on the **Dashboard** or with the IR remote control supplied with your exaSound DAC. Pressing or clicking **Mute** again restores the previous volume level.

Note: AirPlay devices can control the Gamma Music Server volume, however there is no volume synchronization when volume is changed from the Gamma Music Server or the DAC. AirPlay volume control steps are less precise compared to other audio streaming technologies.

Volume Bypass with exaSound DACs

When the volume is set to 0dB, the hardware volume control is turned off and the Gamma Music Server sets the exaSound DAC in Volume Bypass Mode. To activate Volume Bypass:

- On the web interface set the master volume to 0dB.
- Set the left and right volume sliders to 0dB.
- If you are using a multichannel DAC, set all channel sliders to 0dB.

Maximum Volume Limit with exaSound DACs

Use the *Maximum Volume Limit* setting to prevent accidental playback at volume levels that are too loud.

UPnP Server and Music Library

The exaSound Gamma Music Server has a built-in UPnP server. It works with music files stored on attached USB drive or on the optional internal SSD storage. Playback is controlled with apps like MconnectHD, Bubble UPnP, Hi-Fi Cast, Kazoo and others.

Gamma Music Server supports direct connection of up to two USB 3.0 hard-disk drives (HDD) or solid-state drives (SSD). Up to eight USB drives can be connected to the Gamma Music Server using an external powered USB 3.0 hub.

The UPnP server scans attached USB drives and the optional internal SSD storage for audio files. Metadata from the discovered files, like album, artist, and cover art are organized in media library.

When an USB drive is attached for the first time to the Gamma Music Server, or when music files are added or removed, you have to update the UPnP library. From the web user interface, go to *Settings* page and on the UPnP Music Library tab click the *Update* button. Scanning large USB drives may take a while.

Before connecting a USB drive to the Gamma Music Server, make sure to empty the Recycle Bin/Trash Can. The Gamma Music Server may find and include in the media libraries files that are not permanently deleted.

See *Sharing Attached USB Drives on the Network* for instructions how to copy files over the home network to the Gamma Music Server.

	To avoid accidental data loss we recommend powering down the exaSound Gamma Music Server before disconnecting a USB drive. Always maintain a backup copy of your music files. Never disconnect a USB drive during playback.

Specifications

CPU	Intel 8th Generation i7 Processor
RAM	8GB, custom upgrade options up to 32GB
System SSD Drive	128GB, custom upgrade options are available
Internal Storage	Optional Internal 2.5" HDD/SSD Bay
Music Library	OVER 12,000 Albums (160,000 Tracks)
Roon Core Multiroom Capacity	Over Five Zones, Typical
USB Audio Interface	exaSound proprietary **ZeroJitter™** USB audio interface with error correction USB Audio Class 2.0
HRA (High Resolution Audio) Sampling Rate Support	**ENclusiv™** Comprehensive Sampling Rate support **PCM** 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz, 352.8kHz, 384kHz, 705.6kHz, 1536kHz **Native DSD** DSD 64 Fs: 2.8224MHz; 3.072MHz DSD 128 Fs: 5.6448MHz; 6.144MHz DSD 256 Fs: 11.2896MHz; 12.288MHz DSD 512 Fs: 22.5792MHz, 24.576MHz
Volume Control (Feature availability depends on the capabilities of the DAC in use)	Four-way volume synchronization Volume bypass Channel trimming Mute **ZeroResolutionLoss™** volume control for exaSound DACs provides all-time 0dB Full-Scale streaming
Digital Volume Control Steps	0.5 dB or 1dB, depend on the capabilities of the DAC in use

Number of channels	Stereo: 2 channels Multichannel: up to 8 channels Volume control mode is automatically set to match the number of channels of the connected DAC
USB Ports	2x USB 3.0
USB Port Max Current	900mA
USB Storage Interface	USB 3.0
Ethernet Interface	1 x Gigabit Ethernet
IP Setup	IP4, DHCP, manual IP configuration
External Power Supply	Input: 100-240V~, 1.6A, 50-60Hz Output: 19V, 3.42A Compliance CE, FCC, RoHS, Safety CE,UL/cUL,FCC,TUV/GS,PSE
DC Input	19V, 3.42A
Power Consumption	<65 W
Dimensions (W x H x D)	9.72 x 1.57 x 2.16 inches (247 x 40 x 255 mm)
Weight	6.3 lbs (2850g)

Open-source Credits

We make extensive use of open source software for the various technologies, architectures, and interfaces that run on the exaSound Gamma Music Server. In fact, we would be unable to offer the device as we envision it, at the current price, without these publically developed projects. The credit roll is available on the Gamma Music Server Web Interface: https://exasound-pp1.local/.

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Limited One Year Warranty

exaSound's devices are warranted against defective workmanship or materials for one (1) calendar year from the original date of purchase. This warranty applies only to exaSound brand products manufactured by exaSound and sold to the original consumer by either exaSound or an exaSound authorized reseller. This warranty does not apply to exaSound brand products imported and sold by unauthorized dealers, distributors, or other sellers. exaSound may at its sole discretion, refuse to honour the warranty of any such unauthorized product that may be presented for service.

Warranty service can only be performed by exaSound. Devices which are defective must be shipped pre-paid and insured to exaSound for warranty service in accordance with our Return Policy published at https://www.exasound.com/Store/TermsofUse.aspx. For products that we verify to be eligible for warranty service, we will pay the shipping cost to return the Device to you via ground shipment.

If in our assessment the defect is covered by our Warranty, the defective item will, at our sole option, be repaired, replaced with the same item or its functional equivalent, or the purchase price will be refunded. exaSound in its sole and absolute discretion shall be the sole determiner of whether a product is in fact defective.

Replacement parts and products assume the remaining original warranty, or ninety (90) days, whichever is longer.

This limited warranty covers non-commercial use of this product, and shall not apply to the following, including, but not limited to: applications and uses for which this product was not intended; altered product or serial numbers; cosmetic damage or exterior finish; batteries and cable accessories; accidents, abuse, neglect, fire, water, lightning or other acts of nature; incorrect electrical line voltage, fluctuations and surges; failure to follow operating or maintenance instructions. exaSound does not warrant uninterrupted or error-free operation of the product. This limited warranty shall not extend to anyone other than the original purchaser of the product. It is non-transferable and states your exclusive remedy.

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TO OBTAIN WARRANTY SERVICE, please follow these instructions:

- Contact exaSound customer service via email at CustomerService@exaSound.com with details of the defect claimed, product model, serial number, date and place of the original purchase.
- If it is determined that your product needs service, a Return Merchandise Authorization (RMA) number will be issued to you along with return instructions and address of an exaSound service center.
- Pack the product securely in the original packaging, with your assigned RMA number marked clearly on the outside of the package. Send the package pre-paid and insured to the exaSound to obtain warranty service.
- All returns must comply with our Return Policy displayed at https://www.exasound.com/Store/TermsofUse.aspx.