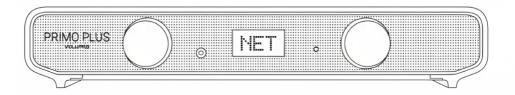


# VOLUMIO PRIMO PLUS



# **Advanced Streaming DAC**

**USER MANUAL** 

**ENGLISH** 



# FOR MUSIC LOVERS, BY MUSIC LOVERS

#### **INTRODUCTION**

Congratulations on your purchase!

Volumio **Primo Plus** is **an advanced streaming DAC** designed with three key principles in mind: sound quality, ease of use, and universal compatibility with music services.

Please read this manual carefully. Our support team is available to assist you with any questions regarding Primo Plus and all of our products at support@volumio.org

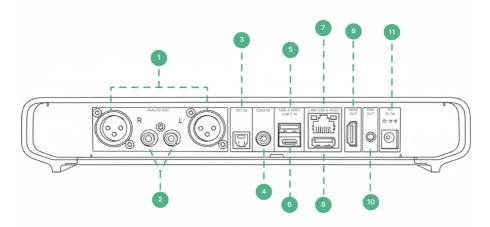
# **USER MANUAL TRANSLATED IN OTHER LANGUAGES**

For the translation of this manual in other languages please click on the link below:

# WHAT'S IN THE BOX?

- Volumio Primo Plus Advanced Streaming DAC
- Volumio Remoto Remote control (battery incl.)
- 5V 3A Power Supply\*
- NFC/QR code information card
  - (\*) Power Adapter is optional, depending on the region and local seller's policy.

#### I\O OVERVIEW



- ANALOG OUT STEREO XLR BALANCED OUTPUT: Recommended for the best audio quality, provides cleaner and noise-free signal supporting longer cable runs. The output level can be adjusted to match your system's requirements in 8 steps, from 1.0 Vrms to 6.3 Vrms.
- ANALOG OUT STEREO RCA UNBALANCED OUTPUT: The output level can be adjusted to match your system's requirements in 8 steps, from 0.5 Vrms to 3.15 Vrms.
- 3. OPTICAL DIGITAL INPUT with TOSLINK connector: Recommended to connect CD Players, TVs/Smart TVs, BD/DVD players, digital cable box, digital tuners etc.
- COAX DIGITAL INPUT with RCA connector: Recommended to connect CD Players, TVs/Smart TVs, BD/DVD players, digital cable box, digital tuners etc.
- USB-A HOST (5V /0.56A): USB port dedicated to USB flash drives, or keyboard/mouse to control external displays.
- **6. DIGITAL INPUT USB-C:** USB port dedicated to computers (PC, Mac), smartphones and tablets. Supports up to PCM 768kHz/32bit and DSD512.
- ETHERNET PORT-LAN: Wired Internet and LAN connection for Ethernet cable. Recommended to stream high-resolution audio from music services and local NAS.
- 8. USB-A HOST (5V / 1.33A): Recommended for high speed drives such as SSD and HDD, but also digital sources and USB flash drives. Select NET to

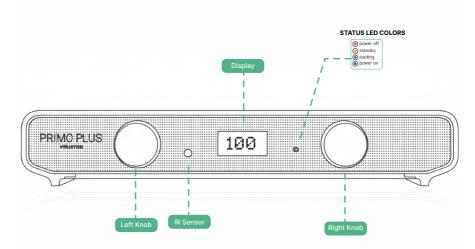
- play audio files from this port. Digital audio output, dedicated to external USB DACs to use Primo Plus as a streamer and digital transport.
- 9. VIDEO OUTPUT HDMI: Connect an external monitor or TV to enjoy Volumio OS on a larger screen in 4K. The video output mirrors the user interface shown on the mobile app.

**Note:** If using a touchscreen monitor or TV, this can be used to control the device. Otherwise a mouse/keyboard must be connected via USB-A.

- 10. 12V TRIGGER OUTPUT: It provides a 12V trigger signal to power ON and OFF other compatible devices, facilitating automation and synchronization of various components of the audio system. The connector is a 3.5 mm jack, the positive output is on the tip, the reference return path is on the sleeve.
- 11. 5V/3A DC IN: Connect the power mains of the provided Power Supply Unit (or a compatible 5V 3A power supply).

**Please note:** Volumio is not responsible for any damage caused by the use of third-party or non-compliant power supply units.

# **FRONT PANEL OVERVIEW**



**DISPLAY:** Shows information such as the selected input and the volume level.

IR SENSOR: Allows control with Volumio Remoto (IR remote control)

**WI-FI ANTENNA**: Primo Plus has an integrated wi-fi antenna to ensure optimal wireless performances on 2.4/5GHz network.

#### **RIGHT KNOB:**

• Short press: Mute/Unmute

• Long press: Select next DAC filter

• Rotate: increase/decrease volume

#### **LEFT KNOB:**

Press the left knob in order to change the device status as reported below:

- Short press from Power-off state: Turn the device on
- Short press from Ready state Enter standby mode
- Short press from stand-by state Enter ready mode
- Long press for 5 seconds: Turn the device off

The front LED indicates the status of the device.

Turn the knob to cycle through the input sources such as:

- NET: Playback from internal streaming service, local files and web radios
- OPT: Playback from optical input
  COAX: Playback from coax input
  USB: Playback from USB-C input

#### STATUS LED COLORS:

Red: power OFFGreen: loadingBlue: readyOrange: standby

# **FIRST SETUP**

When first powered on, the Primo Plus will initialize and this will take a few minutes to complete. Make sure not to remove power and do not operate it for at least five minutes on first power up.

To reach Volumio Primo Plus' User Interface:

- Download Android/iOS APP on your mobile device. Launch the APP and search for a new device Primo Plus will be automatically discovered.
- Follow the step-by-step instructions inside the APP, to set up the unit.

Once the first setup has been completed, your Primo Plus is ready.

For more information on the QUICK START GUIDE, click the link below:

#### **CONNECTION TO THE UNIT**

Primo Plus works best when it is connected to your network since it is meant to be used as a headless device: the suggested method to reach and browse inside Primo Plus is the **Android/iOS APP**.

#### Alternatively:

- You can connect a 4K/60fps screen/touchscreen to the HDMI video output port.
- You can connect Primo Plus from any device on the same network by typing http://primo-plus.local in the address bar of your web browser. If you changed the device name during the First Setup Wizard, replace primo-plus with the name you select (e.g., http://myprimo.local).

# **THE SOFTWARE: VOLUMIO OS**

The OS inside the Primo Plus is Volumio 3 It has been developed to give you the best experience with many functionalities and improvements:

- A new sound architecture
- Major rewrite of the build system
- Based on Linux Buster
- A new plugin store
- New iOS and Android apps
- Manifest UI and Multiroom

For an in-depth guide to Volumio OS, click the link below:

# **SOFTWARE UPDATES**

Volumio features an automatic OTA (Over The Air) updater which is meant to provide a seamless and reliable way to update to new system versions.

To change the auto updater to MANUAL:

- · Go to Settings Menu
- Select System
- Click on Updates

# **RESTORE TO FACTORY SETTINGS**

Volumio Primo Plus can be reset to factory settings and all settings and music stored on the device will be deleted (no changes will be made on the software version!)

There are two ways to perform a Factory Reset:

- from the UI
- with a USB Thumb Drive (in case the unit is not operational due to software error)

#### **Factory Reset Via User Interface**

- Go to Settings Menu
- Select System
- Click on Factory Reset and confirm the warning dialog
- The unit will restart in about five minutes.
- WARNING: All settings and user data will be permanently deleted IMPORTANT: Do not remove power in this phase, as it might damage the unit.

# **Factory Reset Via USB Thumb Drive**

- Get a USB thumb drive
- Format your USB thumb drive as: FAT32
- Download the factory reset file from: http://repo.volumio.org/Primo/ factory\_reset
- Copy the factory reset file to your thumb drive and make sure the file is named exactly "factory\_reset" (Do not rename this file after download)
- Power OFF the unit
- Insert the thumb drive to one of the USB ports
- Power ON the unit
- IMPORTANT: During this phase the unit may restart multiple times and the factory reset will take about five to ten minutes to complete.

# **REMOTE BUTTON FUNCTIONS AND USAGE**

#### **POWER BUTTON:**

• Symbol: ( U

• Function: Turns the device system on or off.

Usage: Press the power button once to toggle the power state.

#### **MUTE BUTTON:**

• Symbol:

• Function: Toggles Mute and Unmute

Usage: Press the button once to put the device into mute mode.

• Press again to unmute the audio.

#### **VOLUME BUTTONS:**

• Symbol: ( )

Function: Decreases the volume.

 Usage: Press the volume down button to incrementally decrease the volume.

• Symbol: <a>Image: Image: Ima

• Function: Increases the volume.

Usage: Press the volume up button to incrementally increase the volume.

### PLAY/PAUSE BUTTON:

• Symbol:

• Function: Play and Pause.

 Usage: Used to start and pause the current audio playback (This function is available only when the input source is set to NET)

#### **SOURCE BUTTON:**

• Symbol:

• Function: Input button

 Usage: Selects the next input source (e.g., USB, Optical, Coaxial, etc.).

#### **PREVIOUS /NEXT BUTTONS:**

• Symbol:

• Function: Previous audio playback

Usage: Short press selects the previous track in the queue (NET input only). Long press selects the previous DAC filter (available for all inputs).

• Symbol:

- Function: Selects the next digital DAC filter.
- Usage: Short press selects the next track in the queue (NET input only). Long press selects the next DAC filter (available for all inputs).

# **TECHNICAL SPECIFICATIONS**

CPU: Broadcom BCM2711, Quad Core 1.5 GHz

RAM: 2 GB DDR4

**INTERNAL MEMORY: 16 GB EMMC** 

LAN: Gigabit 10/100/1000M

WIRELESS NETWORKING: Wi-Fi 802.11a/b/g/n/ac (2.4G and 5G)

**BLUETOOTH: 5.0** 

**USB PORTS:** 

USB-A 2.0 (Host Port n.5)

Electrical Specifications: 5V / 0.56A

USB-A 2.0 (Host Port n.8)

Electrical Specifications: 5V / 1.33A

VIDEO OUTPUT: HDMI, up to 4K/60fps resolution

PRODUCT DIMENSIONS: 27 (L) x 15 (P) x 5 (A) cm

PRODUCT WEIGHT: 2,5 kg

# **AUDIO SPECIFICATIONS**

#### HIGH QUALITY AUDIO OUTPUT POWERED BY DUAL MONO DAC:

2 x ESS Sabre ES9039Q2M

Playback up to PCM 768kHz/32bit and DSD512

MASTER CLOCK: 1 x Ultra-low phase noise (90 fs)

ANALOG BALANCED OUTPUT (Vrms): 1.00, 1.55, 2.00, 3.00, 4.00, 5.00,

6.00, 6.30

ANALOG UNBALANCED OUTPUT (Vrms): 0.50, 0.775, 1.00, 1.50, 2.00,

2.50, 3.00, 3.15

**BLUETOOTH** 5.0

COAX AND OPTICAL S/PDIF INPUT: up to PCM 192kHz/24bit

NET INPUT: up to PCM 384kHz/32bit

USB INPUT: up to PCM 768kHz/32bit and DSD512

USB OUTPUT (USB-A): up to PCM 1536kHz/32bit and DSD1024

ANALOG OUTPUT IMPEDANCE: ≈140Ω

#### **DAC FILTERS**

To select the **DAC FILTERS** on the analog outputs, open the **GENERAL PLAYBACK OPTION** menu in Volumio interface and then go to **ADVANCED AUDIO SETTINGS** 

You can also choose the desired DAC filter either with the Primo Plus right knob or the remote control

DAC Filter mapping of the Primo Plus:

DAC FILTER #1: Linear phase fast roll-off

DAC FILTER #2: Linear phase slow roll-off

DAC FILTER #3: Minimum phase fast roll-off

DAC FILTER #4: Minimum phase slow roll-off

DAC FILTER #5: Minimum phase (default)

DAC FILTER #6: Linear phase fast roll-off apodizing

DAC FILTER #7: Linear phase fast roll-off low ripple

DAC FILTER #8: Minimum phase slow roll-off low dispersion

Please see the DAC Filters Specification and Graphs on page (20)

#### **DAC NOS MODE**

To enable **DAC NOS MODE** on the analog outputs, open the **GENERAL PLAYBACK OPTION** menu in Volumio interface and then go to **ADVANCED AUDIO SETTINGS**.

If DAC NOS MODE is active the digital audio data will be converted into an analog signal without applying oversampling and bypassing the FIR and IIR filters. This approach aims to preserve the natural character and integrity of the original signal by minimizing processing.

**Please Note:** When NOS mode is active, the DAC's internal filters are also bypassed.

# DAC OUTPUT LEVEL

To select **DAC OUTPUT LEVEL** on the analog outputs, open the **GENERAL PLAYBACK OPTION** menu in Volumio interface and then go to **ADVANCED AUDIO SETTINGS**.

Set the Maximum Output Level of the internal DAC, to match your amplifier input capabilities.

**Warning:** Do not select output levels higher than those supported by the device connected to Primo Plus. Doing so may cause distortion or damage to the connected equipment.

# **UI DISPLAY SETTINGS**

#### **DISPLAY BRIGHTNESS:**

Adjust the display brightness in 5 steps (100%, 75%, 50%, 25%, 0%). With brightness set to 0%, the display temporarily switches on when changes are made (i.e. changing input, muting, etc.).

This feature helps reduce distractions during playback or when the device is idle.

#### **DISPLAY USER INTERFACE:**

Select your layout to meet your needs.

SINGLE: maximize visibility by displaying the most relevant information

**COMPOSITE:** maximize the amount of information displayed

#### **OTHER SETTINGS**

**LED BRIGHTNESS:** Adjust the brightness of the device's LED indicators (range: 10%–100%).

**AUTO POWER SAVING:** Enable or disable automatic power-saving mode.

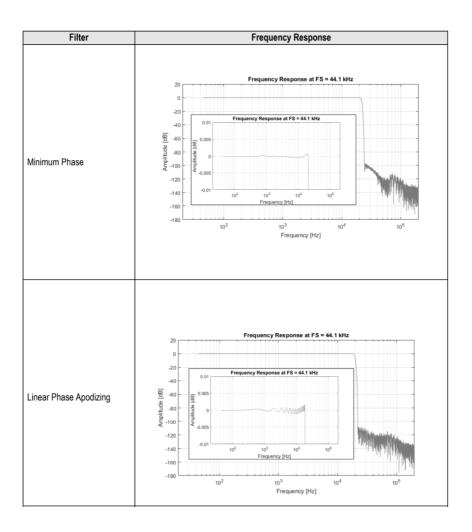
**POWER SAVING TIMEOUT:** Set the inactivity time before the device automatically enters the selected power-saving state. Options: 1, 5, 10, 20, 30 minutes; 1 hour; 2 hours.

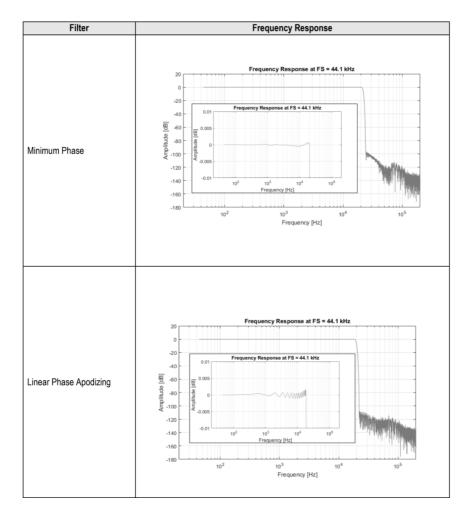
**POWER SAVING ACTION:** Select the desired behavior when power-saving mode is triggered. **OPTIONS:** Standby or Power Off.

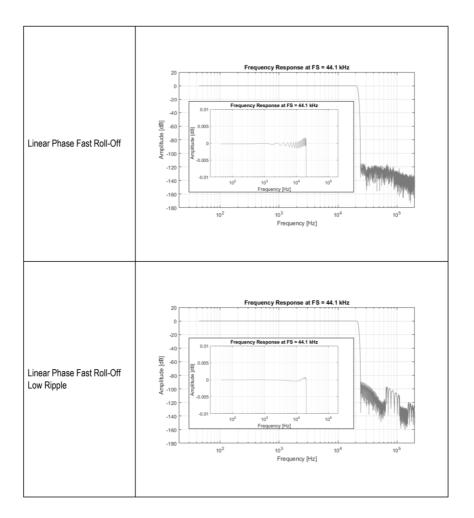
**AUTO POWER ON:** If enabled, the device will automatically power on when the power supply is connected.

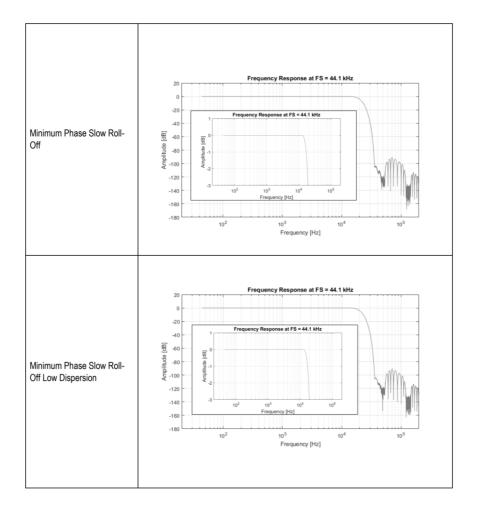
# **DAC FILTERS SPECIFICATIONS & GRAPHICS**

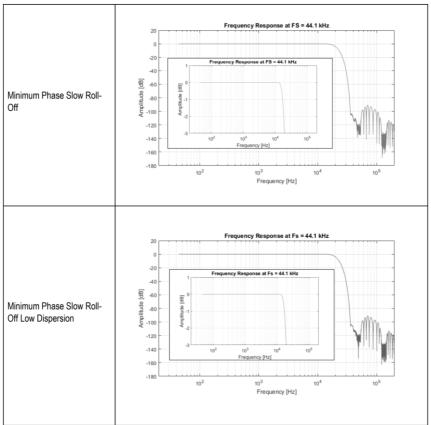
The following frequency responses were obtained from software simulation of these filters. Simulation sample rate 44.1 kHz





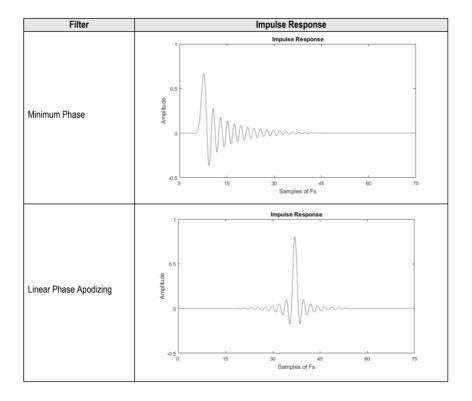


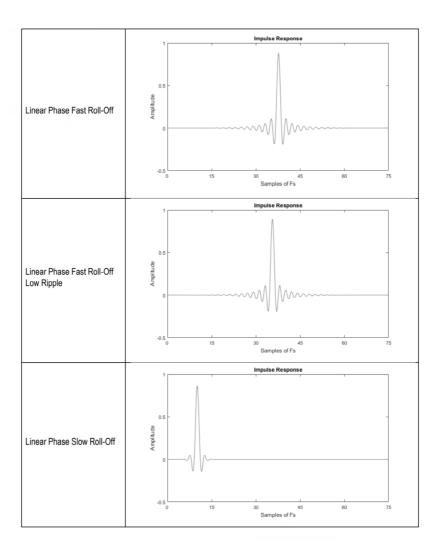


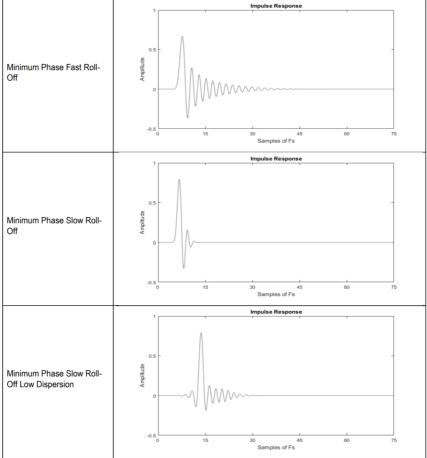


PCM Filter Frequency Response

**PCM FILTER IMPULSE RESPONSE:** The following impulse responses were obtained from software simulations of these filters. They were measured from external impulse response. The extra sample delay to get the data encoded accounts for the external processing time to serialize the data stream.







PCM Filter Impulse Response

# LATENCY CHARACTERISTICS FOR EACH FILTER

Digital Filter	Delay (us) @ FS = 44.1kHz
Minimum Phase (default)	174us
Linear Phase Apodizing Fast Roll-Off	840us
Linear Phase Fast Roll-Off	854us
Linear Phase Fast Roll-Off Low-Ripple	808us
Linear Phase Slow Roll-Off	229us
Minimum Phase Fast Roll-Off	174us
Minimum Phase Slow Roll-Off	152us
Minimum Phase Fast Roll-Off Low Dispersion	310us

# **PCM FILTER PROPERTIES**

Minimum phase					
Parameter	Conditions	MIN	TYP	MAX	UNIT
Pass band				0.45FS	Hz
Stop band	-96dB	0.55FS			Hz
Group delay		2.91/FS		9.01/FS	s
Flatness (ripple)	0.0012				dB

Linear Phase Apodizing							
Parameter	Conditions	MIN	TYP	MAX	UNIT		
Pass band				0.41FS	Hz		
Stop band	-107dB	0.50FS			Hz		
Group delay			32.81/FS		s		
Flatness (ripple)	0.0027				dB		

Linear Phase Fast Roll-off							
Parameter	Conditions	MIN	TYP	MAX	UNIT		
Pass band				0.45FS	Hz		
Stop band	-115dB	0.55FS			Hz		
Group delay			33.43/FS		S		
Flatness (ripple)	0.0031				dB		

Linear Phase Fast Roll-off Low Ripple							
Parameter	Conditions	MIN	TYP	MAX	UNIT		
Pass band				0.46FS	Hz		
Stop band	-97dB	0.55FS			Hz		
Group delay			31.37/FS		s		
Flatness (ripple)	0.0012				dB		

Linear Phase Slow Roll-off							
Parameter	Conditions	MIN	TYP	MAX	UNIT		
Pass band	-3dB			0.44FS	Hz		
Stop band	-90dB	0.75FS			Hz		
Group delay			5.87/FS		s		
Flatness (ripple)					dB		

Minimum Phase Fast Roll-off							
Parameter	Conditions	MIN	TYP	MAX	UNIT		
Pass band				0.46FS	Hz		
Stop band	-99dB	0.55FS			Hz		
Group delay		2.91/FS		9.14/FS	s		
Flatness (ripple)	0.0023				dB		

Minimum Phase Slow Roll-off							
Parameter	Conditions	MIN	TYP	MAX	UNIT		
Pass band	-3dB			0.43FS	Hz		
Stop band	-91dB	0.80FS			Hz		
Group delay		2.08/FS		3.56/FS	s		
Flatness (ripple)					dB		

Minimum Phase Slow Roll-off Low Dispersion						
Parameter	Conditions	MIN	TYP	MAX	UNIT	
Pass band	-3dB			0.43FS	Hz	
Stop band	-90dB	0.80FS			Hz	
Group delay		9.23/FS		9.75/FS	s	
Flatness (ripple)					dB	

# **IMPORTANT SAFETY INFORMATION**

- Review this user manual carefully.
- Keep this user manual for future reference.
- Heed all warnings.
- Follow all instructions.
- Do not use the Primo Plus near water or liquids of any sort.
- Clean only with dry soft cloth. Household cleaners or solvents can damage the finish of the Primo Plus. Please clean and handle the product only after disconnecting from mains power for at least five minutes.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- Protect the power cable from being walked on or pinched, particularly at the plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use original attachments/accessories.
- Unplug the Primo Plus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required
  when the apparatus has been damaged in any way, such as powersupply cable or plug is damaged, liquid has been spilled or objects
  have fallen into the apparatus, the apparatus has been exposed to
  rain or moisture, does not operate normally, or has been dropped.
- The mains plug should be readily available to disconnect the equipment.

- Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- Do not expose apparatus to dripping or splashing and do not place objects filled with liquids, such as vases, on or near the apparatus.
- AC outlet voltages vary from country to country. Before connecting to the mains, make sure that the voltage in your area meets the voltage requirements printed on the power supply.
- The power supply is used to disconnect the unit from the mains.
   Make sure that the power supply is easily accessible at all times.
   Never handle the device or the power supply while your hands are wet or damp.
- Avoid allowing liquids to enter the device or the power supply. Never
  place any item containing liquid, such as a flower vase on or near
  the device. Never spill any liquid on or near the device or the power
  supply.
- Never place any naked flame sources, such as lighted candles on or near the device. The product shall not be used in damp or wet locations, next to a bathtub, sink, swimming pool or any other similar conditions.
- For optimal performance please place the unit on a well vented spot.

#### **WARRANTY**

The manufacturer accepts no responsibility for damage caused by not adhering to these instructions for use. Modification or changes to any part of the product by unauthorized persons release the manufacturer from any liability over and above the lawful rights of the customer.

The Volumio Warranty is valid for all new products purchased from an officially authorized Volumio retailer or from our online store (volumio. com). This warranty is non-transferrable and does not apply to third-party or private sales of Volumio products.

All parts defective in material and workmanship are covered under warranty for two (2) years from the date of original purchase by the original owner. Software defects are not covered by Warranty.

The product must be returned in the condition you received it and with the original box and/or packaging, including manufacturer tags where applicable.

We will not accept the return of products damaged due to negligence or abuse. Please include all packaging and accessories prior to shipping.

Please take the time to carefully package your returns. It is the responsibility of the customer to pay costs related to the repair of returned items damaged in shipping due to improper packaging. The customer is responsible for all return shipping costs for new or used products.

If you feel that your product is eligible for a warranty evaluation due to defect in its materials, operation or workmanship on arrival, please contact our team at: support@volumio.org to receive an RMA and return shipping label.

Detailed info on warranty and return policies here:

https://volumio.com/en/terms-of-service/

#### **WARRANTY**

The software included in this product contains copyrighted software that is licensed under the GPL.

A copy of that license is included in the "Credits" section of the software, accessible via the System settings menu.

If you would like a copy of the GPL v2.0 source code contained in this product shipped on a DVD, you may obtain the complete Corresponding Source code from us for a period of three years after our last shipment of this product for a charge of 20\$ no more than the cost of preparing and mailing a DVD to you.

Please contact foss@volumio.org

This offer is valid to anyone in receipt of this information. Additionally, complete source code of open source components included in this product is available at: http://sources.volumio.org

#### **DISPOSAL INFORMATION**

#### For private households:



Information on Disposal for Users of WEEE This symbol on the product(s) and / or accompanying documents means that used electrical and electronic equipment (WEEE) should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge. Alternatively, in some countries, you may be able to return your products to your local retailer upon purchase of an equivalent new product. Disposing of this product correctly will help save valuable

resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

#### For professional users in the European Union:

If you wish to discard electrical and electronic equipment (EEE), please contact your dealer or supplier for further information.

# For disposal in countries outside of the European Union:

This symbol is only valid in the European Union (EU). If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.

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The information in this user manual was correct at the time of going to press. The manufacturer reserves the right to make changes to the technical specification without prior notice as deemed necessary to uphold the ongoing process of technical development.

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DSD is a registered trademark of Sony Corporation.

All other products and services mentioned may be trademarks or service marks of their respective owners.

Revision 1.0









#### **FCC Warning**

Contains FCC ID: 2ABCB-RPICM4

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. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### Note 1:

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.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

#### Note 2:

- 1. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- 2. The minimum separation generally used is at least 20 cm.

# **EU DECLARATION OF CONFORMITY**

**Model Name: Volumio Primo Plus** 

EU DIRECTIVES

2014/53/EU, Radio Equipment

2011/65/EU, RoHS

#### **EU DECLARATION OF CONFORMITY**

1. Model No.:

Volumio Primo Plus

This declaration of conformity is issued under the sole responsibility of the manufacturer:

Volumio Srl Borgo Albizi 15 50122 Firenze ITALY

3. Object of the declaration:

Advanced streaming DAC

4. The object of the declaration described above is in conformity with:

2014/53/UE and 2011/65/EU

Where applicable, references to the relevant harmonised standards used or references to the technical specifications in relation to which conformity is declared:

EN Emissions: Radiated ETSI EN 301489-1 V. 2.2.3 ETSI EN 301489-17 V. 3.2.4 CEI EN 55032:2015 +/A11:2021

Emissions: Conducted ETSI EN 301489-1 V. 2.2.3 ETSI EN 301489-17 V. 3.2.4 CEI EN 55032:2015 +/A11:2021 Emissions: Radio Requirements

ETSI EN 301893 V.2.1.1

**Emissions: Radio Requirements** 

ETSI EN 300328 V.2.2.2

**Emissions:** 

Harmonic current

ETSI EN 301489-1 V. 2.2.3

ETSI EN 301489-17 V. 3.2.4

CEI EN IEC 61000-3-2:2019 + /A1:2021

EN Emissions: Radiated ETSI EN 301489-1 V. 2.2.3 ETSI EN 301489-17 V. 3.2.4 CEI EN 55032:2015 +/A11:2021

Emissions: Conducted ETSI EN 301489-1 V. 2.2.3 ETSI EN 301489-17 V. 3.2.4 CEI EN 55032:2015 +/A11:2021

**Emissions: Radio Requirements** 

ETSI EN 301893 V.2.1.1

**Emissions: Radio Requirements** 

ETSI EN 300328 V.2.2.2

**Emissions:** 

Harmonic current

ETSI EN 301489-1 V. 2.2.3

ETSI EN 301489-17 V. 3.2.4

CEI EN IEC 61000-3-2:2019 + /A1:2021

Emissions: Voltage fluctuations and Flicker

ETSI EN 301489-1 V. 2.2.3

FTSI FN 301489-17 V. 3.2.4

CEI EN 61000-3-3:2014 + /EC:2016 + /A1:2021

Immunity: Electrostatic discharges (ESD)

ETSI EN 301489-1 V. 2.2.3

ETSI EN 301489-17 V. 3.2.4

CEI EN 55035:2021 + /A1:2021

Immunity: Radio Frequency Electromagnetic Fields

ETSI EN 301489-1 V. 2.2.3

ETSI EN 301489-17 V. 3.2.4

CEI EN 55035:2021 + /A1:2021

Immunity: Fast transients (EFT-Bursts)

ETSI EN 301489-1 V. 2.2.3

ETSI EN 301489-17 V. 3.2.4

CEI EN 55035:2021 + /A1:2021

Immunity: Surge

ETSI EN 301489-1 V. 2.2.3

ETSI EN 301489-17 V. 3.2.4

CEI EN 55035:2021 + /A1:2021

Immunity: Radio Frequency common mode

ETSI EN 301489-1 V. 2.2.3

ETSI EN 301489-17 V. 3.2.4

CEI EN 55035:2021 + /A1:2021

Immunity: Voltage dips and short interruptions

ETSI EN 301489-1 V. 2.2.3

ETSI EN 301489-17 V. 3.2.4

CEI EN 55035:2021 + /A1:2021

**FMF** 

CEI EN IEC 62311:2020

**Electrical Safety** 

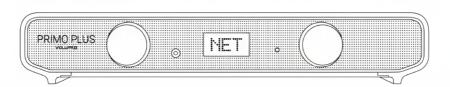
EN IEC 62368-1:2020

Where applicable, the notified body (name and number), description of intervention and certificate

Not applicable, the declaration of conformity is compliant with annex II of the European Directive 2014/53/EU, so the notified body it's not necessary.

Firenze, November, 6, 2025

Micheldhgelo Gudrise





# **Volumio SRL**

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