

# PureAudio

## Lotus DAC5 User's Manual

**DSD**  
Direct Stream Digital



**DXD**  
Digital eXtreme Definition

# SAFETY INSTRUCTIONS

There are two categories of Safety Instructions included in this manual:

- Product Warnings, (i.e., what must never be done to assure avoiding those hazards that could cause bodily injury or property damage); and
- User Directions (i.e., what must always be done to assure the safe use of your device).

The Safety Instructions contained in this manual have been categorized in accordance with the seriousness of the potential hazards through the use of Signal Words. Those Signal Words, and their intended meanings, are as follows:

**DANGER:** Indicates that a failure to observe the Safety Instructions could result in death or catastrophic bodily injury.

**WARNING:** Indicates that a failure to observe the Safety Instructions could result in serious bodily injury.

**CAUTION:** Indicates that a failure to observe the Safety Instructions could result in minor bodily injury or property damage.

**NOTE:** Designates important information that relates to activities and/or conditions that might result in loss of data and/or damage to your device.

## Safe Use and Operation of Your Device

This equipment emits stray RF energy and will interfere with the reception of signals by airborne electronic navigational devices or medical devices. Do not operate this equipment near any sensitive medical devices.

**WARNING:** Use only grounded AC power cords.

Always immediately disconnect the power to the equipment in the event the device emits an unusual odor or sound or generates smoke.

**WARNING:** Never attempt to disassemble, repair or make any modification to your device. Disassembly, modification or any attempt at repair could cause bodily injury or property damage, as well as damage to the device itself.

**WARNING:** Your device is not a toy. Never allow children to play with your device. Misuse, rough or improper handling of your device by children could result in serious bodily injury for any of the enumerated safety warnings in this manual. In addition, always keep all accessories and components out of the reach of small children as small parts might present a choking hazard. Seek immediate medical attention if choking occurs or if any small part has been swallowed.

**CAUTION:** Never raise the sound volume level too high when using your device with earphones. An excessive sound volume level could cause damage to your hearing.

**WARNING:** To reduce the risk of fire or electric shock, do not expose the unit to moisture or water.

Do not allow foreign objects to get into the enclosure. If the unit is exposed to moisture, or a foreign object gets into the enclosure, immediately disconnect the power cord from the wall.

Take the unit to a qualified service person for inspection and necessary repairs.

Read all the instructions before connecting or operating the component.

Keep this manual so you can refer to these safety instructions.

Heed all warnings and safety information in these instructions and on the product itself. Follow all operating instructions.

Do not use this unit near water.

You must allow a minimum 10 cm or 4 inches of unobstructed clearance around the unit. Do not place the unit on a bed, sofa, rug, or similar surface that could block the ventilation openings. If the unit is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling. Keep the component away from radiators, heat registers, stoves, or any other appliance that produces heat.

The unit must be connected to a power supply only of the type and voltage specified on the rear panel. Connect the component to the power outlet only with the supplied power supply cable or an exact equivalent. Do not modify the supplied cable.

Do not route the power cord where it will be crushed, pinched, bent, exposed to heat, or damaged in any way. Pay particular attention to the power cord at the plug and where the cord exits the back of the unit.

The power cord should be unplugged from the wall outlet during a lightning storm or if the unit is to be left unused for a long period of time.

Immediately stop using the component and have it inspected and/or serviced by a qualified service agency if:

- The power supply cord or plug has been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit shows signs of improper operation.
- The unit has been dropped or damaged in any way.

## 1. Introduction

The PureAudio Lotus DAC5 is a reference-class DAC designed for studio professionals, With seven digital inputs, the Lotus DAC5 is a full-featured DAC and preamp ideally suited for high-end systems.

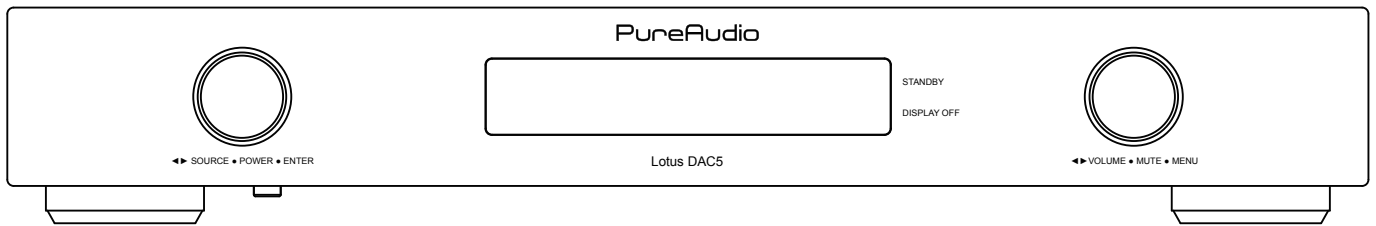
## 2. Features

As the heart of an audio system, the Lotus DAC5 supports an extensive number of inputs and formats. Utilizing one of the world's highest performing 32-bit audio DACs, the ES9038PRO, PureAudio Lotus DAC-5 well above the competition.

- PureAudio PSRC IC chip provides sample rate up/down converted processing. Adjust the range from PCM 44.1KHz to DSD512.
- ESS Newest Generation: The world's highest performance 32-bit Stereo DAC (ES9038PRO). State-of-the-art DAC with warmer sonic characteristics.
- Seven digital filters.
- Output Level variable or fixed mode
- Analog output phase change.
- Analog output channel setting.
- Display brightness adjustment.
- Support the decoding of DSD DoP formats via SPDIF inputs .
- Full microprocessor control with memory retention.
- Seven digital inputs for complete system flexibility.
- USB Asynchronous transfer mode.
- USB Supports DSD native playback by ASIO and DoP method.
- USB Supports MQA decode.
- Individually adjustable volume on each input for precise level matching of sources.
- Exclusive driver software for Windows.
- Available in black or silver anodized aluminum finish.

### 3. Quick Start Guide

#### 3.1 Front Panel



##### Power / Enter and Source:

Briefly press to ON/Standby mode.

Turn the knob to switch between inputs.

In menu mode, turn the knob to switch menu item.

In menu mode, briefly press to accept load default function.

##### Mute / Menu and Volume:

Brief press to Mute/Unmute.

Brief press for 3 sec enter Menu / exit Menu.

Turn the knob to adjust volume.

In menu mode, turn the knob to switch item value.

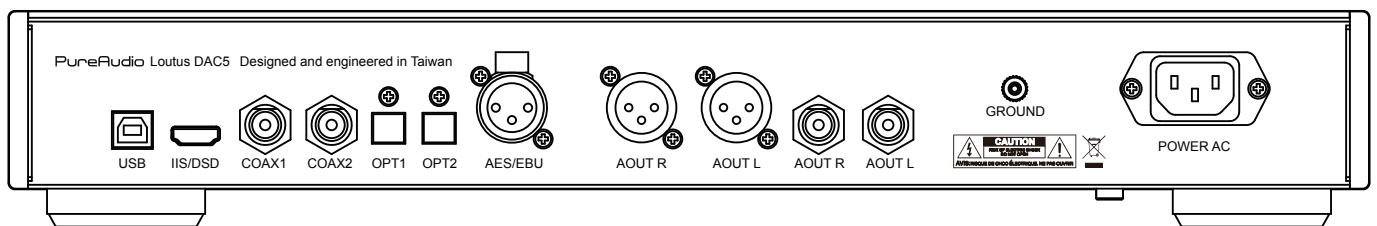
##### STANDBY LED

LED will light, indicating that the DAC5 is standby.

##### DISPLAY OFF LED:

LED will light indicating that the display is off.

#### 3.2 Rear Panel



##### • Digital Inputs:

**USB Input:** USB slot is for connecting with the B Type USB to A Type USB 2.0 version cable to PC's USB port which is able to send digital audio up to PCM 384KHz and DSD 256.

**IIS/DSD Input:** With an HDMI cable to transfer IIS and DSD data, Do not connect to the HDMI output of Set Top Box or BD / DVD player.

**Coaxial Input:** Both COAX1 and COAX2 accept up to 768KHz. for DSD DOP standard input up to DSD256.

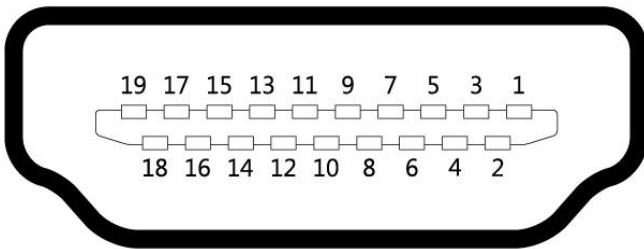
Optical Input: Both OPT1 and OPT2 digital inputs accept up to 192KHz. for DSD DOP standard input up to DSD64.

AES/EBU Input: Professional digital input accepts up to 192KHz. for DSD DOP standard input up to DSD64.

Ground terminal: Chassis ground.

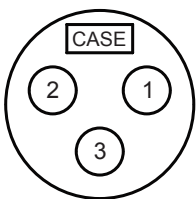
AC Inlet: Connect the supplied mains lead to the AC IN (115V or 230 V) terminal on the rear of the DAC.

IIS / DSD Pin define:



- PIN1 : SDATA - / DSD L-
- PIN2 : GND
- PIN3 : SDATA + / DSD L+
- PIN4 : BCK + / DSD CLK +
- PIN5 : GND
- PIN6 : BCK - / DSD CLK -
- PIN7 : LRCK - / DSD R -
- PIN8 : GND
- PIN9 : LRCK + / DSD R +
- PIN10 : NC
- PIN11 : GND
- PIN12 : NC
- PIN13 : NC
- PIN14 : NC
- PIN15 : NC
- PIN16 : NC
- PIN17 : GND
- PIN18 : NC
- PIN19 : + 3.3V OUTPUT

AES / EBU (XLR FEMALE ) Pin define:

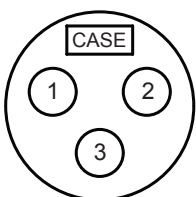


- Pin 1 : Ground
- Pin 2 : Positive (+)
- Pin 3 : Negative (-)

• Analog Outputs:

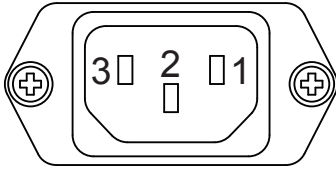
1x Stereo Audio Output ( RCA )

1x Balanced Stereo Audio Output ( XLR MALE )



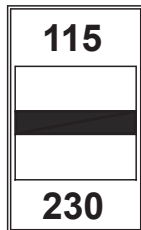
- Output Phase: Normal
  - Pin 1 : Ground
  - Pin 2 : Positive (+)
  - Pin 3 : Negative (-)
- Output Phase: Invert
  - Pin 1 : Ground
  - Pin 2 : Negative (-)
  - Pin 3 : Positive (+)

• AC Inlet:



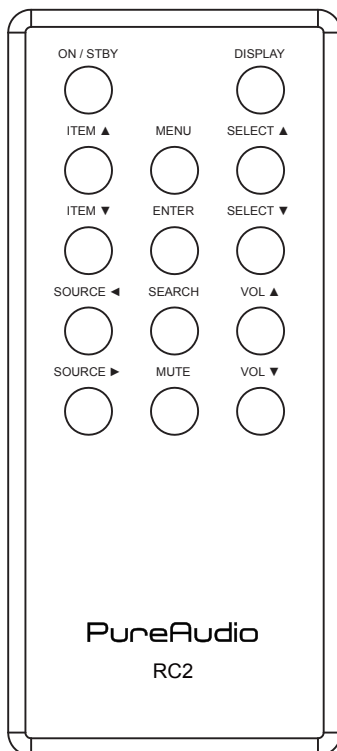
- Pin 1 : Live Conductor : L
- Pin 2 : Ground Conductor : PE
- Pin 3 : Neutral Conductor : N

• AC Inlet Voltage Selector:



Make sure that the AC voltage selector switch at the bottom of the unit is switched to the appropriate voltage for your country. All DAC5s are shipped with the switch set to 230V AC in order to prevent accidental damage.

### 3.3 Remote Control



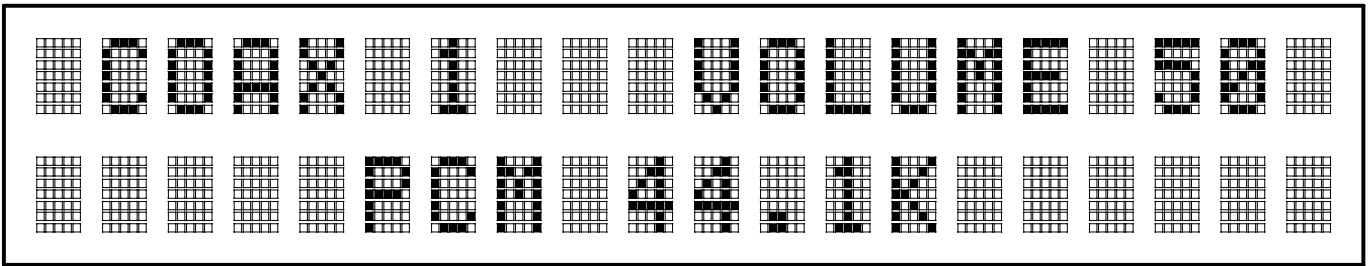
- ON / STBY: Toggle power STANDBY and ON
- DISPLAY: Turn off / on display
- ITEM ▲ ▼: Navigate Menu item
- MENU: Enter / exit the Setup Menu
- ENTER: Only for load default function
- SELECT ▲ ▼: Navigate item value
- SOURCE ◀ ▶: Digital input selection
- SEARCH: Quickly search for valid signal input
- MUTE: Mutes / Unmutes audio
- VOL ▲ ▼: Increase / Decrease volume

**Battery Replacement:**

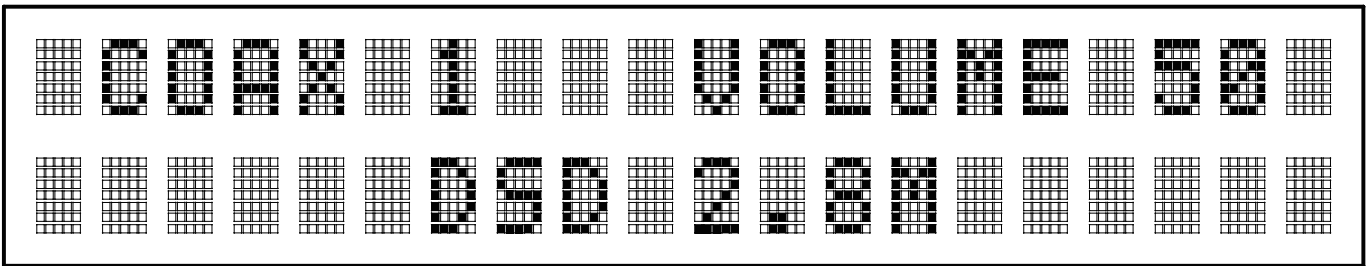
To change the battery, please remove the 4 screws and the bottom cover to reveal the battery casing.

## 4. Front Panel Display

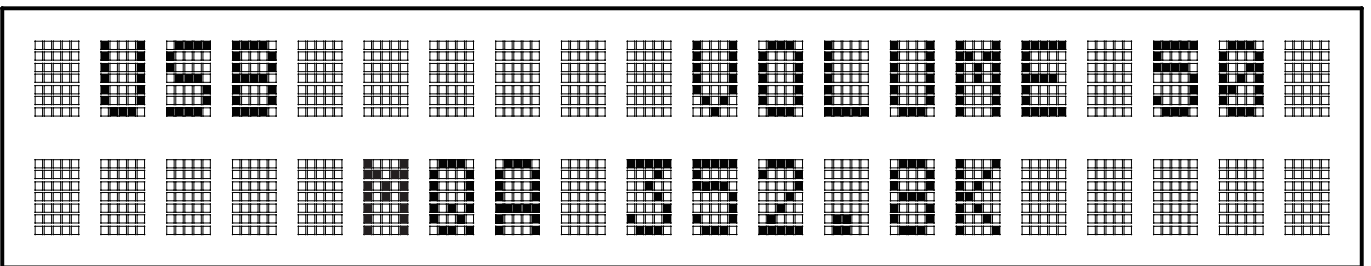
### 4.1 PCM sample rate



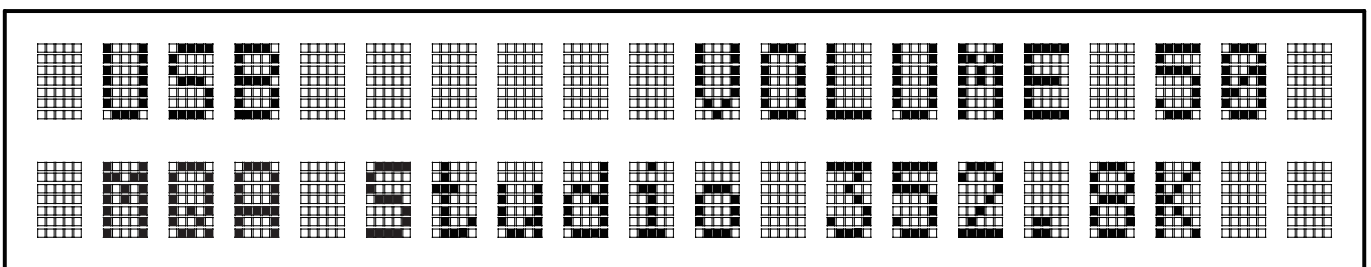
### 4.2 DSD sample rate



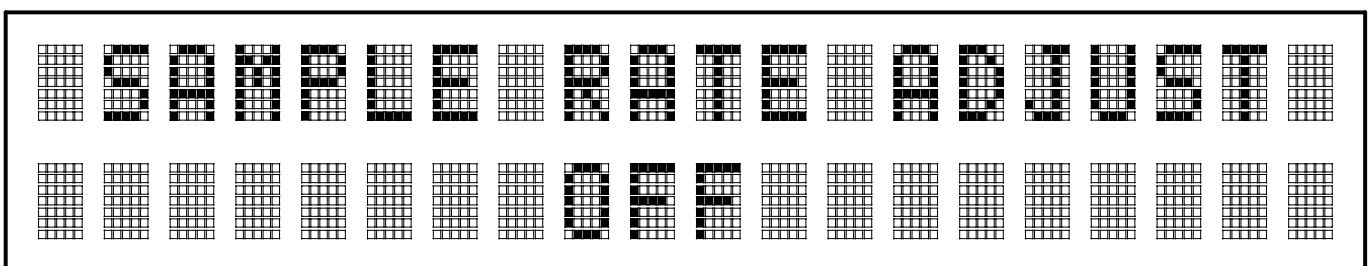
### 4.3 MQA original sample rate



### 4.4 MQA Studio original sample rate



### 4.5 Setup Menu





## 5. Setup Menu structure

Item ▲▼	Value ▲▼
SAMPLE RATE ADJUST	<ul style="list-style-type: none"> <li>OFF</li> <li>PCM 44.1K</li> <li>PCM 48K</li> <li>PCM 88.2K</li> <li>PCM 96K</li> <li>PCM 176.4K</li> <li>PCM 192K</li> <li>PCM 352.8K</li> <li>PCM 384K</li> <li>PCM 705.6K</li> <li>PCM 768K</li> <li>DSD 2.8M</li> <li>DSD 3.0M</li> <li>DSD 5.6M</li> <li>DSD 6.1M</li> <li>DSD 11.2M</li> <li>DSD 12.2M</li> <li>DSD 22.6M</li> <li>DSD 24.6M</li> </ul>
DIGITAL FILTER	<ul style="list-style-type: none"> <li>MINIMUM PHASE FAST</li> <li>MINIMUM PHASE SLOW</li> <li>LINEAR PHASE FAST</li> <li>LINEAR PHASE SLOW</li> <li>APODIZING FAST</li> <li>HYBRID FAST</li> <li>BRICKWALL</li> </ul>
OUTPUT LEVEL	<ul style="list-style-type: none"> <li>VARIABLE</li> <li>FIX</li> <li>HALF FIX</li> </ul>
OUTPUT PHASE	<ul style="list-style-type: none"> <li>NORMAL</li> <li>INVERT</li> </ul>
CHANNEL SETTING	<ul style="list-style-type: none"> <li>( L-CH ) ( R-CH )</li> <li>( R-CH ) ( L-CH )</li> <li>( L-CH ) ( L-CH )</li> <li>( R-CH ) ( R-CH )</li> </ul>
DIMMMER	<ul style="list-style-type: none"> <li>HIGH BRIGHTNESS</li> <li>LOW BRIGHTNESS</li> </ul>
LOAD DEFAULT	<ul style="list-style-type: none"> <li>NO</li> <li>YES -&gt; PRESS ENTER</li> </ul>

## 6. MQA - Master Quality Authenticated

The Lotus DAC5 includes MQA technology, which enables you to play back MQA audio files and streams, delivering the sound of the original master recording. The front panel display indicates if the MQA stream is detected. 'MQA' or 'MQA Studio' indicates that the product is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material. "MQA Studio" indicates it is playing an MQA Studio file, which has either been approved in the studio by the artist/producer or has been verified by the copyright owner. For more about MQA please visit: <http://www.mqa.co.uk/>

'Manufactured under licence from MQA Limited. The MQA logo is a trade mark of MQA Limited'.

Note: During MQA playback, the SAMPLE RATE ADJUST function will be disabled and force to OFF mode. also DIGITAL FILTER function will be disabled and force to MINIMUM PHASE SLOW.

## 7. Technical Specifications

### DIGITAL

- USB: Type B 2.0 Hi-Speed, data stream up to 384KHz/24Bit and DSD 256.
- IIS/DSD: Supports PCM 768KHz/32Bit and DSD 512 data streams.
- COAXIAL: Supports PCM 44.1KHz ~ 768KHz/32Bit and DSD DOP 64,128 and 256.
- OPTICAL: Supports PCM 44.1KHz ~ 192KHz/32Bit and DSD DOP 64.
- AES/EBU: Supports PCM 44.1KHz ~ 192KHz/32Bit and DSD DOP 64.

### ANALOG

- Analog Outputs Connectors:
  - 2 XLR balanced outputs: FIX mode 8Vrms, HALF FIX mode 4Vrms.
  - 2 RCA unbalanced outputs: FIX mode 4Vrms, HALF FIX mode 2Vrms.
- Output Impedance: < 50 Ohm.
- Frequency response: 20 Hz - 20 KHz /  $\pm 0.3$  dB.
- SNR: > 110 dB.
- THD+N: < 0.0003%.

### GENERAL

- USB Audio Firmware: upgradable via USB DFU tool.
- Power Supply: AC voltage selector switch at the bottom of the unit, 115V or 230V.
- Dimensions [W x H x D]: 430 mm x 55 mm x 315 mm.
- Weight: 5.2Kg
- Power consumption: 13.5W (0.9W Standby)

## 8. Package Content

- The Lotus DAC5 DAC (silver or black)
- Aluminum remote
- Power cord

## PureAudio Limited Warranty and Limitation of Liabilities

### ADDITIONAL RIGHTS

For consumers, who are covered by consumer protection laws or regulations in their country of purchase or, if different, their country of residence, the benefits conferred by this warranty are in addition to all rights and remedies conveyed by such consumer protection laws and regulations. This warranty does not exclude, limit or suspend any rights of consumers arising out of nonconformity with a sales contract. Some countries, states and provinces do not allow the exclusion or limitation of incidental or consequential damages or allow limitations on how long an implied warranty or condition may last, so the limitations or exclusions described below may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary by country, state or province. This limited warranty is governed by and construed under the laws of the country in which the product purchase took place.

### LIMITED WARRANTY

For a period of ONE (1) YEAR from the date of retail purchase by the original end-user purchaser ("Warranty Period"), PureAudio warrants (i) this product against defects in materials and workmanship, and (ii) that each Product, unmodified and under normal use and conditions, will substantially comply with PureAudio's applicable written technical documentation for the Product. PureAudio reserves the right to make substitutions and modifications from time to time in the specifications of Products sold by PureAudio, provided that such substitutions or modifications do not materially affect overall Product performance.

### OBTAINING WARRANTY SERVICE

Products need to return to Taiwan for repair or replacement, you will comply with all applicable import and export laws and regulations and be responsible for all custom duties, V.A.T. and other associated taxes and charges.

### EXCLUSIONS AND LIMITATIONS

This Limited Warranty applies only to hardware products manufactured by or for PureAudio that can be identified by the "PureAudio" trademark, trade name, or logo affixed to them. The Limited Warranty does not apply to any non-PureAudio hardware products or any accessories, even if packaged or sold with PureAudio hardware. Non-PureAudio manufacturers, suppliers, may provide their own warranties. Other accessories distributed by PureAudio under the PureAudio brand name are not covered under this Limited Warranty. This warranty does not apply:

- (a) to damage caused by accident, abuse, misuse, misapplication, liquid contact, fire, earthquake, non-PureAudio products, or other external causes.
- (b) to damage caused by service performed by anyone who is not a NASP.
- (c) to a product or a part that has been modified without the written permission of PureAudio.
- (d) to consumable parts, such as batteries, or protective coatings designed to diminish over time unless failure has occurred due to a defect in materials or workmanship.
- (e) to cosmetic damage, including but not limited to scratches, dents, and broken plastic on ports.
- (f) to defects caused by normal wear and tear or otherwise due to the normal aging of the product.
- (g) if any PureAudio serial number has been removed or defaced.

Important: Do not open the hardware product. Opening the hardware product may cause damage

that is not covered by this warranty. Only PureAudio or a NASP should perform service on this hardware product.

This warranty and remedies set forth above are exclusive and lieu of all other warranties, remedies and conditions, Whether oral or written, Express or implied. PureAudio specifically disclaims any and all implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose. If PureAudio cannot lawfully disclaim implied warranties under this limited warranty, All such warranties, Including warranties of merchantability and fitness for a particular purpose are limited in duration to the duration of this warranty. No PureAudio reseller, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

Pureaudio is not responsible for direct, special, incidental or consequential damages resulting from any breach of warranty or condition, or under any other legal theory, Including but not limited to lost profits, downtime, goodwill, damage to or replacement of equipment and property, Any costs of recovering, reprogramming, or reproducing any program or data stored in or used with Pureaudio products, and any failure to maintain the confidentiality of data stored on the product. Pureaudio specifically does not represent that it will be able to repair any product under this warranty or make a product exchange without risk to or loss of programs or data.

PureAudio shall not be liable for any incidental or consequential damages for breach of any express or implied warranty on this product. Except to the extent prohibited by applicable law, any implied warranty of merchantability or fitness for a particular purpose on this product is limited in duration to the duration of this warranty.