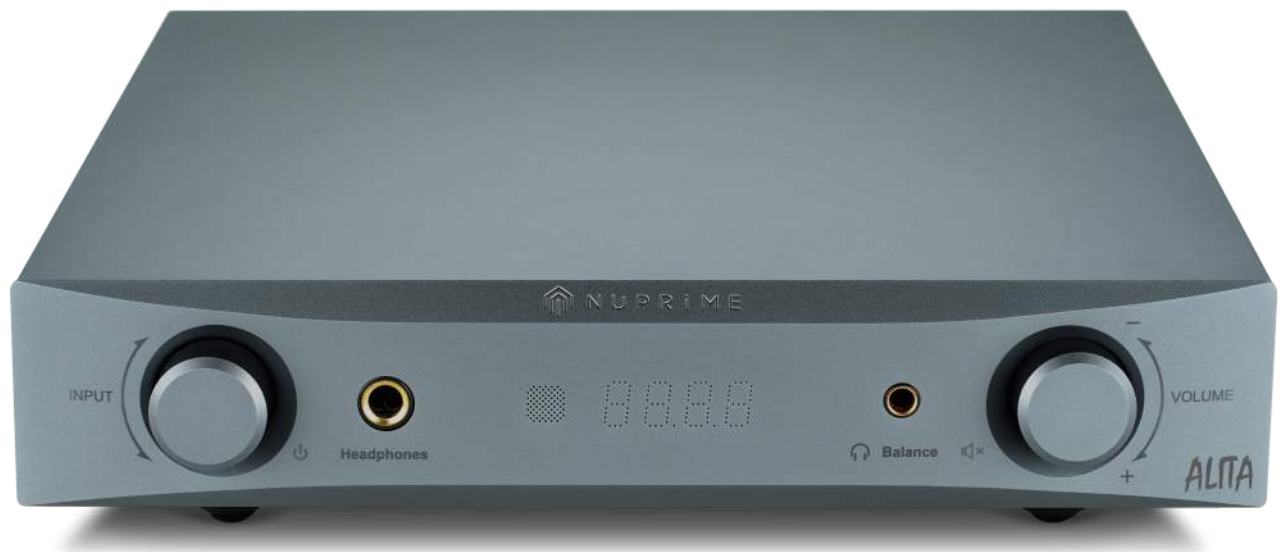




Reference Class DAC With Balanced 4.4mm & 6.3mm
Headphone Outputs Designed For Studio Professionals

ALITA

USER'S MANUAL

Table of Contents

FCC Notice - Declaration of Conformity Information.....	2
EU Declaration of Conformity	3
Safety Instructions.....	4
Introduction.....	8
Specifications	11
Quick Start Guide	12
Display	13
Rear Panel	14
IIS / DSD Pin define	16
Headphone Pin define	17
Remote Control	18
NuPrime's Limited Warranty and Limitation of Liabilities	20

FCC Notice - Declaration of Conformity Information

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 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 on and off, 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.

WARNING: Only peripherals complying with the FCC class B limits may be attached to this equipment.

Changes or modifications made to this equipment, not expressly approved by us or parties authorized by us could void the user's authority to operate the equipment. 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.

EU Declaration of Conformity

CE Hereby, NuPrime Audio, Inc. declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.

The manufacturer of this product is NuPrime Audio, Inc., 1712 Pioneer Ave. Ste 1817, Cheyenne, Wyoming 82001, USA.

The Authorized Representative for EMC and product safety is NuPrime Audio, Inc., 1712 Pioneer Ave. Ste 1817, Cheyenne, Wyoming 82001, USA.

For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

For Customers in Europe



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The

recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local Civic Office, your household waste disposal service or the shop where you purchased the product.

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

From Hi-Res to Extreme Resolution

High-volume storage has become cheap enough for the proliferation of hi-res music beyond CD quality (16-bit/44.1kHz). Storing 24-bit/96 kHz or 192 kHz music with PCM encoding in uncompressed format (typically WAV) or lossless compression format (such as FLAC, M4A, WMA) has become standard practice for audio enthusiasts.

Music is typically recorded in 24 or 32-bit PCM or DSD format at the recording studio. It is then converted to lower resolution format for mass-market distribution.

Pulse-code modulation (PCM) is a method used to digitally represent sampled analog signals. It is the standard form of digital audio in computers, compact discs, digital telephony and other digital audio applications. In a PCM stream, the amplitude of the analog signal is sampled regularly at uniform intervals and each sample is quantized to the nearest value within a range of digital steps. A PCM stream has two basic properties that determine the stream's fidelity to the original analog signal: the sampling rate, which is the number of times per second that samples are taken, and the bit depth, which determines the number of possible digital values that can be used to represent each sample. DXD is simply PCM 24-bit/352.8 kHz.

Direct-Stream Digital (DSD) is the trademark name used by Sony and Philips for their system of digitally recreating audible signals for the Super Audio CD (SACD). DSD uses pulse-density modulation encoding – a technology to store audio signals on digital storage media that are used for the SACD. The signal is stored as delta-sigma modulated digital audio, a sequence of single-bit values at a sampling rate of 2.8224 MHz (64 times the CD Audio sampling rate of 44.1 kHz, but only at 1/32768 of its 16-bit resolution).

The same music in DSD64 (2.8 MHz sampling rate) format takes up about 20% more storage space than 24-bit/96kHz format. The NuPrime ALITA is designed to faithfully reproduce the music irrespective of the format used.

Introduction

With its IIS/DSD and XLR outputs and decoding capability of PCM 384K & DSD256, the NuPrime Alita is a reference-class DAC designed for studio professionals. With five digital and one analog stereo inputs, the Alita is a full-featured DAC and preamp ideally suited for high-end systems. The balanced 4.4mm 'Pentaconn' socket and 6.3mm standard stereo headphone outputs support Single Ended Unbalanced, Fully Balanced and Active Balanced Ground Driving headphone amplifier.

High Power World-Class Balanced Headphone Amplifier

The Alita headphone amplifier is capable of driving the most demanding headphones, be it through the balanced 4.4mm 'Pentaconn' socket or the 6.3mm standard stereo socket. The 'Pentaconn' socket (manufactured by Nippon Dics Co.) is the new unified standard for balanced headphone connection which headphone and cable manufacturers are using in their new and future products. Audiophile quality components and a fully balanced layout ensures minimal crosstalk and maximum channel separation. Supplying up to 1.2W of output power, the circuitry supports Single Ended Unbalanced, Fully Balanced and Active Balanced Ground Driving. Besides offering a high level of transparency through both types of connection, each offers a slightly different flavor.

Through the 4.4mm 'Pentaconn' socket balanced output, listeners will appreciate the pristine background with the absence of noise. The soundstage is wide and possess a strong presence with a full and extended bass.

Through the 6.3mm socket output, the sound is clearly outlined and has a sense of naturalness. The midrange performance is a prominent highlight and imaging is solidly focused.

A Reference Class Preamp

To meet the requirement of customers who want to eliminate extra components in their system, a high-end preamp capable of driving the power amplifier directly is an essential part of the design. The Alita includes features borrowed from traditional high-end preamps:

- Advanced, FPGA implemented switched-resistor ladder network for controlling volume, i.e., a single resistor in the signal path at any volume setting.
- Individually adjustable volume on each input for precise source level matching.
- Volume adjustment in 99 precise, 0.5dB increments.

The Heart

As the heart of an audio system, the Alita supports an extensive number of inputs and formats. Utilizing one of the world's best performing 32-bit audio DACs, the AK4493, EQ is only a first step for designing the ultimate DAC. State-of-the-art solutions, readily available to all vendors, along with the experience and proprietary know-how in creating many Editor's Choice and Product of The Year award-winning products elevate the NuPrime Alita well above the competition.

Several notable features:

- Balanced 4.4mm 'Pentaconn' socket and 6.3mm standard stereo headphone outputs support Single Ended Unbalanced, Fully Balanced and Active Balanced Ground Driving.
- NuPrime SRC IC chip provides FPGA processing where Input signals are up-sampled to mega hertz before down converted to the targeted sampling rate with ultra-low jitter and distortion.
- AKM Newest Generation: High Sound Quality Premium 32-bit Stereo DAC (AK4493 EQ). State-of-the-art DAC with warmer sonic characteristics, supporting USB PCM 384 and DSD256.
- A proprietary NuPrime implementation that is also capable of decoding DoP formats via coaxial and optical inputs (to support NuPrime Omnia portable device that are able to output DoP stream in addition to S/PDIF).
- NuPrime vibration-free isolation feet (patent pending*)
- Extension port for Bluetooth dongle and WiFi audio streaming (optional)
- Full microprocessor control with memory retention
- Five digital inputs and one stereo input for complete system flexibility
- Supports DSD native playback by ASIO2.1 and DoP method
- Ultra-low-noise JFETs in the input stage for the lowest possible noise floor
- Volume adjustment in 99 precise 0.5dB increments
- Advanced, FPGA implemented thin-film switched-resistor ladder network for controlling volume, with a single resistor in the signal path at any volume setting
- Individually adjustable volume on each input for precise level matching of sources
- Exclusive driver software for Windows
- Standard driver software for Mac
- Asynchronous transfer mode
- Very low power consumption on Standby Mode

Specifications:

Inputs:

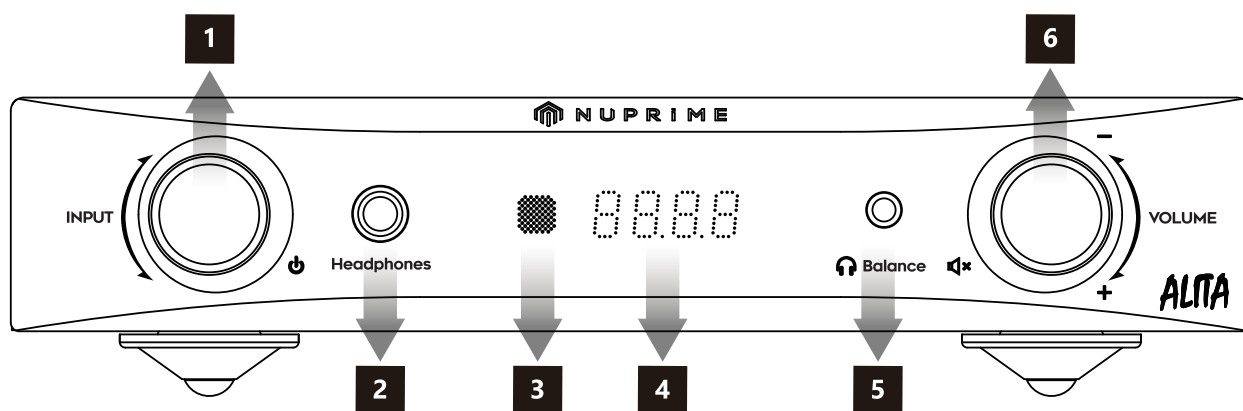
- 1 x USB PCM / DSD Digital (PCM up to 384kHz & DSD up to DSD256)
- 1 x Coaxial Digital S/PDIF (PCM up to 768KHz supporting DoP format DSD256)
- 1 x Optical Digital S/PDIF (PCM up to 192KHz supporting DoP format DSD64)
- 1 x Bluetooth or WiFi receiver module (optional).
- 1 x IIS/DSD HDMI connector (PCM 768KHz/32Bit and DSD 256 data streams.)
- 1 x Analog Stereo RCA

Outputs:

- 1 x 6.3mm headphone out
Output power: 1700 mW, 32 ohms, <0.01% THD (watts per channel).
Output power: 135 mW, 600 ohms, <0.005% THD (watts per channel).
- 1 x MMCX 4.4mm "Pentaconn" balanced headphone out
Output power: 1700 mW, 32 ohms, <0.01% THD (watts per channel).
Output power: 135 mW, 600 ohms, <0.005% THD (watts per channel).
- 1 x pair of stereo RCA out : 4 Vrms.
- 1 x pair of stereo XLR balanced out : 8 Vrms.
- 1 x Optical S/DPIF out (PCM up to 192KHz supporting DoP format DSD64)
- Frequency response: 20 Hz - 20 KHz / ± 0.3 dB.
- SNR: > 110 dB.
- THD+N: < 0.0005%.
- Dimensions: 235 mm W x 281 mm D x 55 mm H (including feet)
- Weight: 2.5Kg
- Worldwide AC voltage: (90VAC~130VAC // 210VAC~ 250VAC) With Voltage Select Switch
- AC Fuse: Slow-blow, 2.5A, 250VA

Quick Start Guide

Front Panel



- 1** Power / Input Selector:
Briefly press for 3 sec to On/Off standby mode
Turn the knob to switch between inputs
- 2** Standard 6.3mm (1/4") stereo headphone jack
- 3** Remote IR receiver
- 4** Display
- 5** 4.4mm "Pentaconn" balanced headphone
- 6** Volume control:
Turn the knob clockwise to increase volume
Turn the knob counterwise to decrease volume
Briefly press the knob to Mute / un-Mute

Display

PCM Sample rate:

44.1
48
88.2
96
176.4
192
352.8
384

DSD Sample rate :

d2.8 (64)
d5.6 (128)
d11.2 (256)

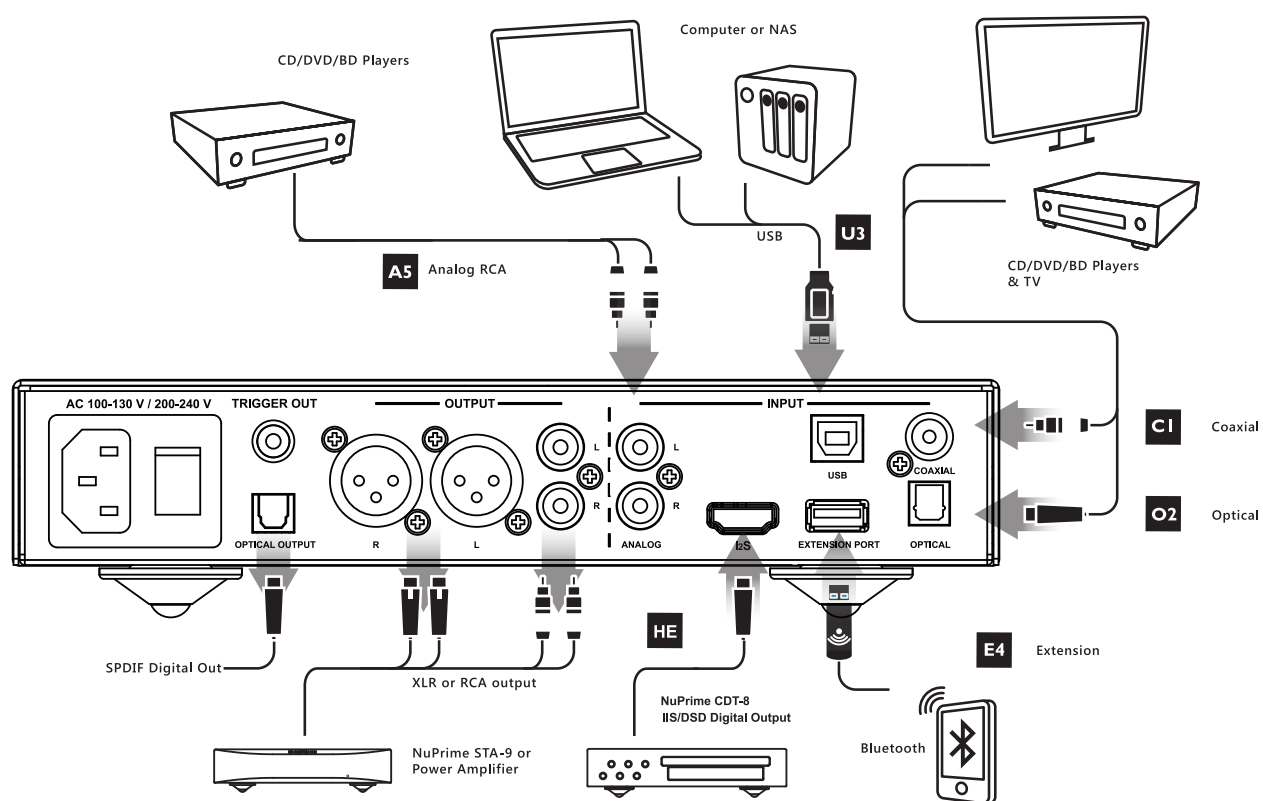
Volume display:

00 ~ 99

Inputs Display:

C1: Coaxial input
O2: Optical input
U3: USB input
E4: Extension port input
A5: Stereo analog input
HE: IIS/DSD Digital input

Rear Panel



Inputs:

C1: Coaxial input for CD/DVD/BD players, TV and any device with a coaxial source.

O2: Optical input for CD/DVD/BD players, TV and any device with an optical source.

U3: USB input for computer (PC/MAC) and for NAS devices.

E4: Extension port for Bluetooth or WIFI. (Optional)

A5: Stereo analog for CD/DVD/BD players, TV and any analog source device.

HE: IIS/DSD Digital input With HDMI cable to transfer IIS and DSD data from NuPrime source devices.

Do not connect to the HDMI output of Set Top Box or BD / DVD player.

Note: ALITA does not guarantee that all NAS will operate and be compatible due to wide variety of brands and custom specs.

Outputs:

1x Optical Output (PCM up to 192KHz supporting DoP format DSD64)

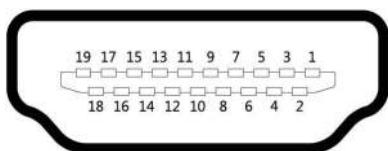
1x Balanced Stereo Audio Output (XLR MALE)

1x Stereo Audio Output (RCA)

1x MMCX 4.4mm balanced headphone jack

1x TRS 6.3 mm headphone jack

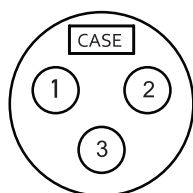
IIS / DSD Pin define



PIN ₁ : SDATA - / DSD L-	PIN ₆ : BCK - / DSD CLK -	PIN ₁₁ : GND	PIN ₁₆ : NC
PIN ₂ : GND	PIN ₇ : LRCK - / DSD R -	PIN ₁₂ : NC	PIN ₁₇ : GND
PIN ₃ : SDATA + / DSD L+	PIN ₈ : GND	PIN ₁₃ : NC	PIN ₁₈ : NC
PIN ₄ : BCK + / DSD CLK +	PIN ₉ : LRCK + / DSD R +	PIN ₁₄ : NC	PIN ₁₉ : + 3.3V OUTPUT
PIN ₅ : GND	PIN ₁₀ : NC	PIN ₁₅ : NC	

Note : Alita does not guarantee that all IIS/DSD source will operate and be compatible due to wide variety of brands and custom specs.

XLR MALE Pin define



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

Others :

Ground terminal : Chassis ground.

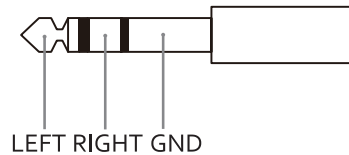
AC Inlet : Connect the supplied mains lead to the AC IN (115V or 230 V) terminal on the rear of the DAC.

AC 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 PALAB products are shipped with the switch set to 230V AC in order to prevent accidental damage.

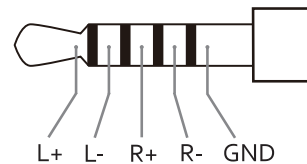


Headphone Pin define:

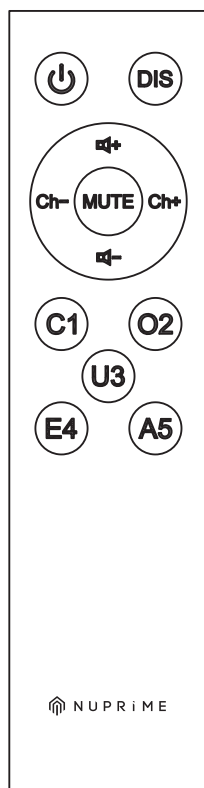
Standard 6.3mm stereo plugs



JEIT standard RC-8141C



Remote Control



-  Toggle power STANDBY and ON
 - DIS: Turn off / on display
 - Ch+: Input selection next channel
 - Ch-: Input selection previous channel
 - Vol +: Volume up
 - Vol -: Volume down
 - C1: Coaxial input selection
 - O2: Optical input selection
 - U3: USB input selection
 - E4: Extension port selection
 - A5: Analog input selection
 - HE: IIS/DSD Digital input
- Note: Press A5 to toggle between A5 & HE input selection

Battery Replacement:

To change the battery, please remove the rear battery cover to reveal the battery casing.

NuPrime's 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"), NuPrime warrants (in) this product against defects in materials and workmanship, and (ii) that each Product, unmodified and under normal use and conditions, will substantially comply with NuPrime's applicable written technical documentation for the Product. NuPrime reserves the right to make substitutions and modifications from time to time in the specifications of Products sold by NuPrime, provided that such substitutions or modifications do not materially affect overall Product performance.

If a hardware defect exists and a valid claim is received within the Warranty Period, at its option and to the extent permitted by law, NuPrime will (1) repair the hardware defect at no charge, using new or refurbished replacement parts, (2) exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product, or (3) refund the purchase price of the product. NuPrime may request that you replace defective parts with user-installable new or refurbished parts that NuPrime provides in fulfillment of its warranty obligation. A replacement product/part assumes

the remaining warranty of the original product or ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you. When a product or part is exchanged, any replacement item becomes your property and the replaced item becomes NuPrime's property. When a refund is given, your product becomes NuPrime's property.

OBTAINING WARRANTY SERVICE

If you purchased the product in the U.S., deliver the product, at your expense, to any NuPrime Service Center located in the U.S. If you purchased the product outside of the U.S., deliver the product to any NuPrime Authorized Importer in the country where you purchased the product. Be aware, however, that not all countries have NuPrime Authorized Service Providers ('NASP') and not all Authorized Service Providers outside the country of purchase have all parts or replacement units for the product. If the product cannot be repaired or replaced in the country it is in, it may need to be sent to a different country or returned to the country of purchase at your expense for repair or replacement. If you seek service in a country that is not the country of original purchase, 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. Where international service is available, NuPrime may repair or exchange defective products and parts with comparable products and parts that comply with local standards.

You can always deliver the product to NuPrime's U.S.A or Taiwan service center for obtaining warranty service, however, you may have to pay for shipping cost.

NuPrime may send you user-installable new or refurbished replacement product or parts to enable you to service or exchange your own product ("DIY Service"). Upon receipt of the replacement product or part, the original product or part becomes the property of NuPrime and you agree to follow instructions, including, if required, arranging the return of original product or part to NuPrime in a timely manner.

When providing DIY Service requiring the return of the original product or part, NuPrime may require a credit card authorization as security for the retail price of the replacement product or part and applicable shipping costs. If you follow instructions, NuPrime will cancel the credit card

authorization, so you will not be charged for the product or part and shipping costs. If you fail to return the replaced product or part as instructed or the replaced product or part is not eligible for warranty service, NuPrime will charge the credit card for the authorized amount.

EXCLUSIONS AND LIMITATIONS

This Limited Warranty applies only to hardware products manufactured by or for NuPrime that can be identified by the "NuPrime" trademark, trade name, or logo affixed to them. The Limited Warranty does not apply to any non-NuPrime hardware products or any accessories, even if packaged or sold with NuPrime hardware. Non-NuPrime manufacturers, suppliers, may provide their own warranties. Other accessories distributed by NuPrime under the NuPrime 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-NuPrime 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 NuPrime; (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; or (g) if any NuPrime 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 NuPrime or a NASP should perform service on this hardware product.

This warranty and remedies set forth above are exclusive and in lieu of all other warranties, remedies and conditions, whether oral or written, express or implied. NuPrime specifically disclaims any and all implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose. If NuPrime 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 NuPrime reseller, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

NuPrime 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 NuPrime products, and any failure to maintain the confidentiality of data stored on the product. NuPrime 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.

Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages or exclusions or limitations on the duration of implied warranties or conditions, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary by state or province.

Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.

Replacement as provided under this warranty is the exclusive remedy of the consumer. NuPrime 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.



NUPRIME

beyond
ordinary