



NuPrime's IA-9XG is the most compact and powerful integrated amplifier in the world and it is designed to work well in an analogue audio system. It combines two cutting-edge technologies – NuPrime ODC and Harmonic Generation circuits – to offer adjustable sonic characteristics. This makes it perfect for either studio monitoring or relaxing music listening.

IA-9XG

USER'S MANUAL

## Table of Contents

|  |    |
|--|----|
| FCC Notice - Declaration of Conformity Information.....                        | 2  |
| EU Declaration of Conformity .....   | 3  |
| Safety Instructions.....   | 4  |
| Description .....  | 7  |
| Features .....   | 10 |
| Revolutionary ANC GaN Power Supply Technology .....                            | 11 |
| Gallium Nitride High Frequency High Efficiency Power Module (GaN HFHFPM) ..... | 13 |
| Performance Benefits .....   | 15 |
| NuPrime’s Limited Warranty and Limitation of Liabilities .....                 | 19 |

### **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 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.

**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., 30 N Gould St. Ste N, Sheridan, WY 82801, USA.

The Authorized Representative for EMC and product safety is NuPrime Audio, Inc., 30 N Gould St. Ste N, Sheridan, WY 82801,

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

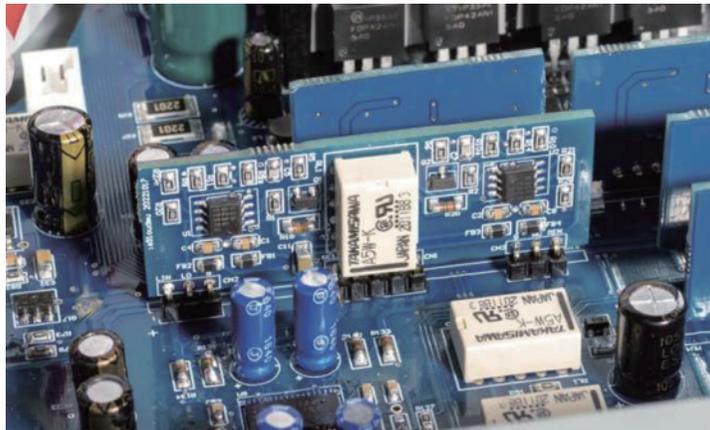
## Description

The IA-9XG offers the unique ability to customize its sound characteristics to suit your musical preferences.

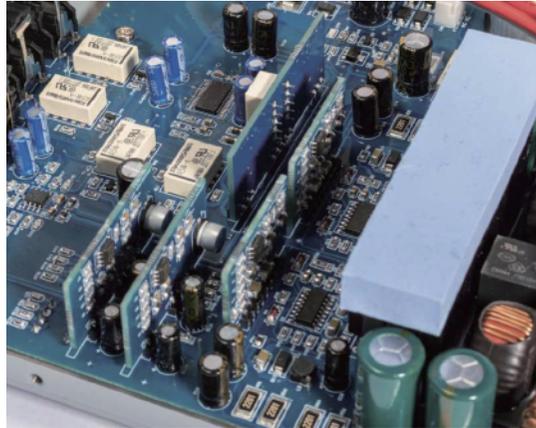
- NuPrime Only Distortion Cancellation (ODC) circuit for ultra-low distortion for neutral and detailed sound.
- Harmonic generation circuit (utilizing Class A transistors) for slightly warm, end-rhyme, and rich sound similar to that of a vacuum tube amplifier.



A toggle switch that allows you to select only ODC circuit or ODC with natural harmonics. In Ultra- Low Distortion mode  $f_0$ , it is typically suitable for studio monitoring or music with many dynamics, such as Rock & Roll. Alternatively, you can increase natural harmonics ( $2f_0$ ) when relaxing and listening to more vocal or classical music.



The ODC class D PWM module include two NuPrime's new ultra-low distortion amplifier modules (THD=0.0014%) composed of MUSES8820 op-amp in a new delta sigma circuit. It has excellent ultra-low distortion and high driving force characteristics.



NuPrime IA-9XG pre-amp includes a MM phono input. The input and output use a special audio Relay Switch, which has the lowest interference and highly accurate transmission, to switch the source.



The phono input has a variety of settings for input resistors and capacitors to match different MM cartridges. The phono amplifier is a 2-stage RIAA amplifier that utilises NJR MUSES8820 audio quality op-amp to provide an accurate RIAA curve and low distortion at high amplification and performance.

**MM phono amplifier adjustment switch**

|     | 1   | 2    | 3     | 4     |
|-----|-----|------|-------|-------|
| ON  | 47k | 100k | 100PF | 220PF |
| OFF |     |      |       |       |

The input impedance: 32K ohm / 47K ohm / 100K ohm  
 The input capacitance: 100PF / 220PF / 320PF

**L**



**R**

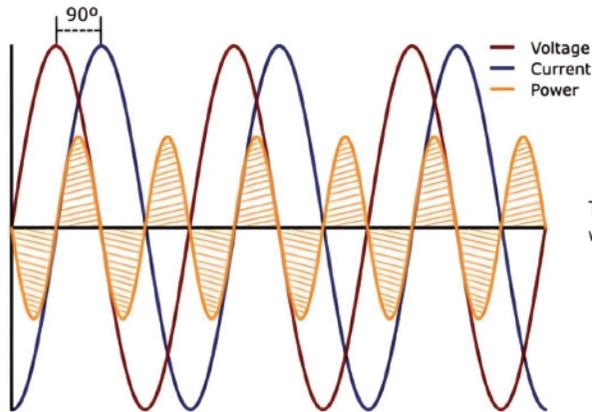


1&2 ON=32K  
 1 ON=47K  
 2 ON=100K  
 3&4 ON=320PF  
 3 ON=100PF  
 4 ON=220PF

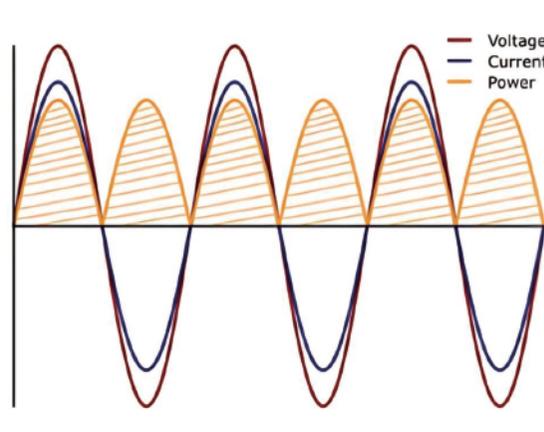
## Features

- A toggle switch that allows you to select only ODC circuit or ODC with natural harmonics.
- LP vinyl RIAA phono amplifier circuit, with adjustable input capacitance and impedance.
- 1 set of Phono input, 1 set of XL R input, 2 sets of RCA input.
- Digital control (with 99 segments) of analog volume circuit. Automatic memory when powered off.
- NuPrime specially customized audio-specific capacitors, 13200uf and 25A high-current bridge rectifiers, providing fast and dynamic speaker driving force.
- NuPrime's ultra-low-noise ANC GaN power supply features a dual-phase interleaved GaN Power Factor Correction circuit with Active Noise Cancellation.
- Input and output Trigger for power on/off control of multiple devices.

## Revolutionary ANC GaN Power Supply Technology Advanced GaN Power Factor Correction with Active Noise Cancellation



The voltage and current diagram without power factor correction.



The voltage and current after power factor correction.

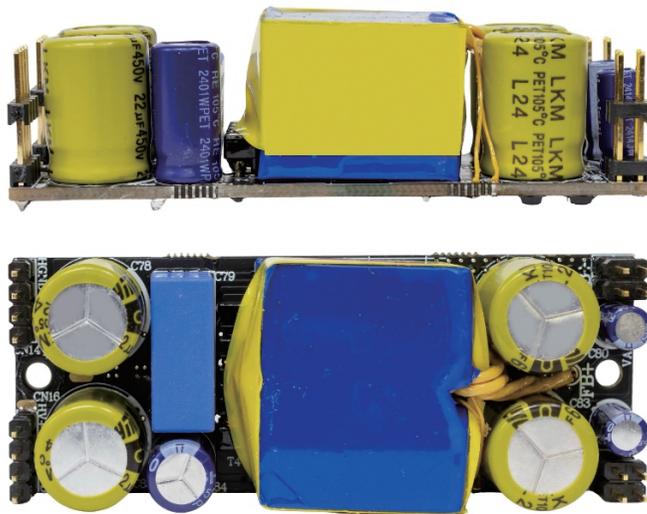
At the heart of the IA-9XG's power supply architecture lies a sophisticated dual-phase interleaved GaN Power Factor Correction (PFC) circuit with Active Noise Cancellation. The feedback-based active noise-cancelling system functions much like ANC headphone technology, suppressing power supply noise to the level of a high-end linear supply. This innovative design approach delivers exceptional voltage regulation while maintaining minimal noise levels and achieving ultra-high efficiency. The entire PFC module is housed within a remarkably compact 75 × 30 × 25 mm enclosure, yet delivers an impressive 600 watts of output power.



The dual-phase interleaved topology represents a significant engineering advancement, allowing for smoother power delivery and reduced ripple current compared to traditional single-phase designs. This results in cleaner power conversion and improved overall system performance.

## Gallium Nitride High Frequency High Efficiency Power Module (GaN HFHFPM)

Beyond the PFC stage, the IA-9XG employs new-generation GaN semiconductor modules for the critical power conversion stages that supply the amplifier circuits. These modules showcase the remarkable capabilities of GaN technology, with each individual module maintaining the same compact  $75 \times 30 \times 25$  mm footprint while delivering up to 250 watts of output power and instantaneous peak current capabilities of up to 10 amperes.



The choice of GaN semiconductors over traditional silicon-based solutions enables this extraordinary power density while maintaining excellent thermal characteristics and switching efficiency. This translates to reduced heat generation and improved long-term reliability.

## **Symmetrical Dual Supply Architecture**

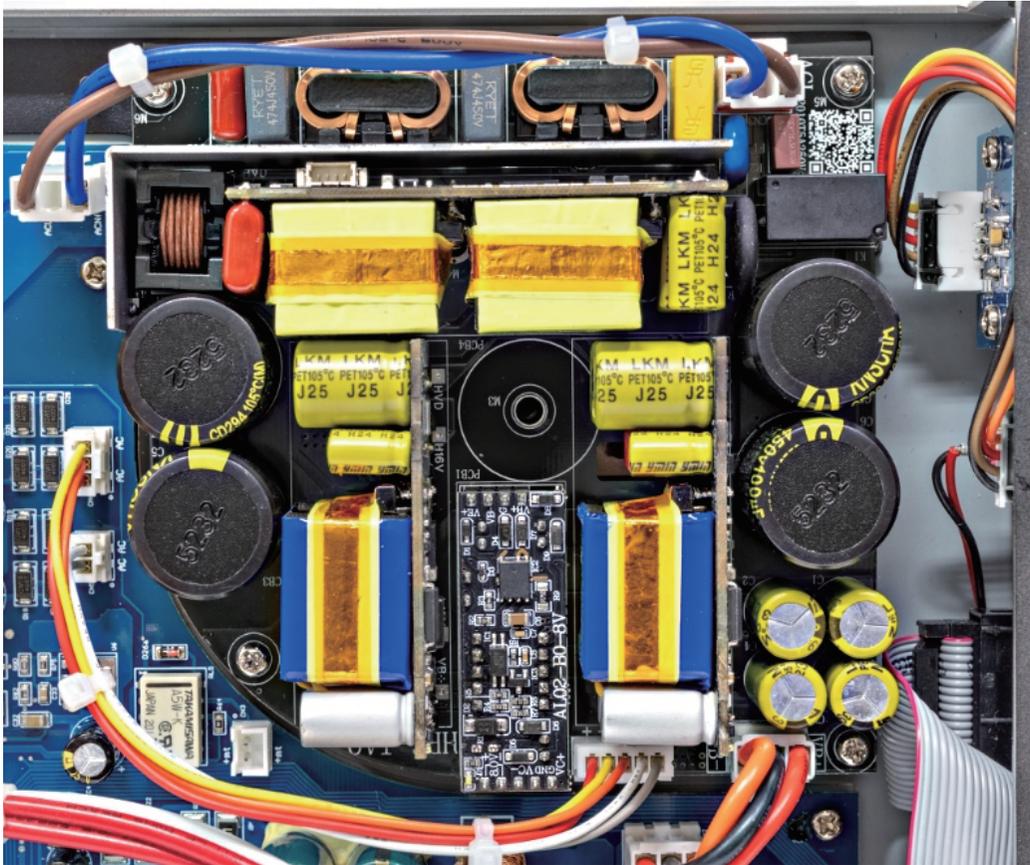
The IA-9XG's power supply design incorporates two independent GaN power blocks configured to create a symmetrical dual supply system, providing both positive and negative voltage rails. This balanced approach ensures optimal performance for the amplifier's differential circuit topology.

Combined, these twin power blocks deliver a total output of 500 watts with peak current capability reaching 20 amperes. This substantial power reserve enables the IA-9XG to achieve an impressive 200 watts per channel of music output power, ensuring dynamic headroom for even the most demanding musical passages.

## **Engineering Excellence Through Miniaturization**

Perhaps most remarkably, this advanced power supply system delivers performance equivalent to traditional transformer-based power supplies while occupying only one-fourth the physical space and weighing merely 20% of conventional designs. This dramatic reduction in size and weight opens new possibilities for amplifier design and placement flexibility without compromising performance.

## Performance Benefits



The integration of GaN Power Factor Correction with GaN Power Modules creates a synergistic effect that delivers multiple performance advantages. The system achieves exceptional efficiency with minimal energy loss, translating to reduced operating costs and environmental impact. The high power output capability within such a compact form factor represents a paradigm shift in power supply design philosophy.

From an audio perspective, the GaN-based power supply contributes to the IA-9XG's sonic signature through fast, detailed, and dynamic sound reproduction. The ultra-clean power delivery creates a deep black background that enhances musical detail retrieval and provides excellent channel separation, allowing listeners to experience music with exceptional clarity and precision. The NuPrime IA-9XG's GaN power supply technology represents a convergence of advanced semiconductor engineering and audio design philosophy, delivering a solution that pushes the boundaries of what's possible in compact, high-performance amplifier design.

## Specifications

Power Output (RMS): 2 x 170W @ 8 Ohms, 2 x 200W @ 4 Ohms  
Power Output (peak): 2 x 200W @ 8 Ohms, 2 x 250W @ 4 Ohms  
Max output current 15A@4 Ohms

### Inputs

- 1x Phono Stage
- 2x Analog Stereo RCA
- 1x Analog Stereo XLR
- 1x Trigger in: DC12V in (3- pin 3.5mm phone jack)

### Outputs

- 2 x Speaker Out
- 1 x Trigger Out: DC12V Out (3-pin 3.5mm phone jack)
- Gain: 38X
- Sensitivity (to rated power): 0.93Vrms
- Input Impedance: 10K Ohms
- Output impedance 0.11 Ohm; Class D output impedance 0.01 Ohm
- WATT / THD / S/N (typical) : 0.002@20W/8 Ohms
- Frequency Response: 10Hz to 35kHz (-3dB)
- Standby Power : 7W @ 115V outlet, 7W @ 230V outlet
- Idle Power : 14W @ 115V outlet, 14W @ 230V outlet

### Phono Stage

- Input resistance: 32K ohm / 47K ohm / 100K ohm
- Input capacitance: 100 pF / 220 pF / 320 pF
- MM Input Sensitivity: 4.0 mV @ 1KHz
- GAIN: MM input to LINE output (Vol./Max.) => 65dB @ 1K Hz

#### Dimensions and Weight:

- Worldwide AC voltage: (115VAC / 230VAC) with Voltage Select Switch
- AC Fuse: Slow blow, 5A, 250VAC
- Color: Black or Silver
- Product Dimension: 61 x 235 x 281 mm (H x W x D)
- Package Dimension: 80 x 390 x 360 mm (H x W x D)
- Product Weight: 2.5kg
- Package Weight: 3.5kg

Warranty: 1 year.

## 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 YEAR from the date of retail purchase by the original end-user purchaser ("Warranty Period"), NuPrime 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 NuPrime' 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.