

OWNER'S MANUAL

AudioNemesis

Enjoy the Music

*Superior Audio Products
Designed and Handmade in Italy*



**DIGITAL TO ANALOGUE AUDIO CONVERTER
DC-1 VLE
Very Limited Edition**

INTRODUCTION

Thank you for your purchase of the **AudioNemesis DC-1 Very Limited Edition!**

This product represents a great evolution in audio technology at affordable price. It represents an important step to Music bringing the listener to emotion of live Music events. This product is designed for the best quality of sound and reliability, matching unprecedented performance with convenience not obtainable from most high performance products.

All **AudioNemesis** products are made for helping you in listening to your favourite Music for many years; no compromises in core parts.

AudioNemesis products are not made for a limited life, every part is used to take you in listening to your favourite Music for a very long time: we respect You and Music above all.

THANK YOU FOR CHOOSING AUDIONEMESIS

INTRODUCTION

- Read carefully these instructions before turning on this appliance. Keep these instructions in a sure place for future readings.
- Heed all warnings.
- Follow all instructions.
- Do not use this device near water, or with high humidity, or under the rain or moisture.
- Do not install near heat sources such as radiators, stoves or other apparatus (including amplifiers) producing heat.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- This device can be used only for purposes it is designed for.
- Never open the appliance: risk of electric shock. Refer servicing to qualified personnel only.
- Do not modify the appliance.
- Use high quality cables and power cord. Protect the cord from being walked on or pinched, particularly at plugs, extension cords and the point at which they exit the unit.
- The device is connected to ground through the power cord. Be sure that the power cord you are using has the ground connection. Be also sure that your connector has the ground connection. A grounding type plug has 2 blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit, into your outlet, consult an electrician for replacement of the obsolete outlet.
- Before connecting this appliance to the mains, be sure that the voltage information in the rear label of the appliance is compatible with your mains voltage.
- If the appliance had wide thermal shocks (for example, from low external temperature to high room temperature), do not turn on the appliance, but wait till the appliance temperature equals the room one (about 1 hour).
- Unplug this device during lightning storms or when not used for long periods of time.
- Refer all servicing to qualified service personnel only. Servicing is required when the unit has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the device, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

No expressed or implied warranty is made for any AudioNemesis product damaged by accident, abuse, misuse, natural or personal disaster, unauthorized modification. Any disassembly, components or parts replacement, perforation or modification of the chassis or modifications performed to the unit will void the warranty.

CAUTION

To reduce the risk of electric shock do not remove the cover or the front panel or any other part. Inside there is no user serviceable parts. Refer servicing to qualified personnel only.

WARNING

To reduce the risk of electric shock or fire, do not expose this appliance to moisture or rain.



This symbol, wherever it appears, alerts you to the presence of dangerous voltage (inside the enclosure) that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.



This symbol, wherever it appears, alerts you to the need of specific disposal, due to recycling, following the Directive 2002/96/EC (WEEE). Please refer to your National Register for the correct procedure or call your official **AudioNemesis** dealer / distributor.



This product complies with the EMC directive (89/336/EEC) and the low voltage directive (73/23/EEC).

A LETTER FROM FABIO CAMORANI

Dear Audio Enthusiast,
Thank you for your purchase of the **DC-1 Very Limited Edition**.

AudioNemesis was born to offer serious and reliable products, instruments for Music lovers. At the centre of all **AudioNemesis** products there is only Music. Most of competitors are offering products for impressing Audiophiles, but after a few discs only, audiophiles feel the need for a change! This is due to a poor and not natural sound. The reproduction of Music is a repeatable event by definition and also imperfect. I think that reproduction may have many interpretations. The one by **AudioNemesis** put Emotion behind everything, a step ahead, because this is the only common element between Produced (Live) Music and Reproduced (Home) Music. Emotion is the essence of the Music. Listening to Music using **AudioNemesis** products you will have all the Emotion of Live Music, without special effects, without pretending, no false creations. Natural feeling, richness of harmonics, details of the event: everything is reproduced with a very clear sense of LIVE, without false aspects, without false sounds.

When the **DC-1** was introduced in 2005, it was a very good success. Like all other **AudioNemesis** products, **DC-1** was designed without preconceptions, without following trends, and without following the latest technology "innovation". On the contrary, circuit simplicity and a minimum number of components is a key element. Less is better, "keep it simple", but we do want to use the right device for the right purpose in the right way. Our products are simple appliances, using only the minimum quantity of parts for the proper work, following "the simpler the better, but not even simpler". **DC-1** was understood as a very special product, designed and built in a unique way for its class, an instrument for Emotions, for Music. It was clear its design was a breaking point with the past, because it was totally different from what offered by the market, a simple circuit, full of uncommon choices for its class and rare in absolute, no matter the cost. The market of digital to analogue converters in this class (but also up to a few times the cost) is full of similar products, similar in schematic and sound. And maybe with the latest chip. It's very rare to see original designs, with real study and research on sound (with clear ideas and listening tests). And the net (and ebay) is truly full of similar and very cheap zero-oversampling converters. Despite the simple topology very similar to our product and to the original design (Kusunoki), and despite the high quality parts, they sound bad, without the richness of the Music, with no balance.

However, in spite of the success we never stopped developing this concept. We made a lot of tests, we listened to all comments and critics from our customers. This way we found new improvements. From these points the Up-Grade KIT was born, in December 2007. And in August 2008 we introduced the **DC-1 Upgrade Edition**, an already up-graded **DC-1**. The **Upgrade Edition** was the result of the research made with the first tests of the **VLE**.

But we never stopped again. The original circuit was developed again and again in parallel with the offer of the Up-Grade KIT and the **DC-1 Upgrade Edition**. We improved step by step all the circuit, finding new ways for a better sound. So, after 5 years of **DC-1** we have decided to offer a very special edition, named **VLE**, that's **Very Limited Edition**. A new amazing product! We all are so proud of it!

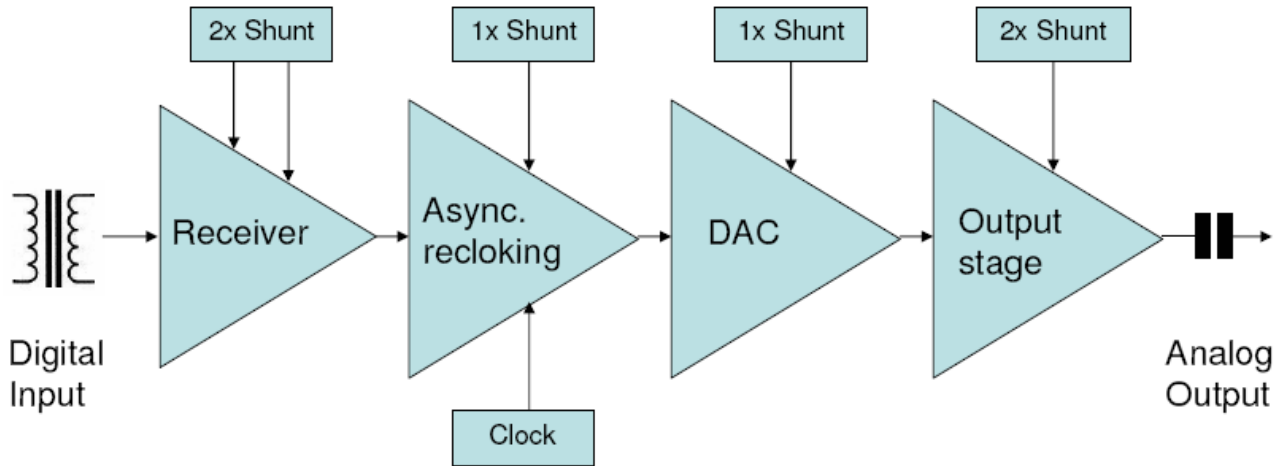
VLE is a unique product, we have produced only 40 pieces, all together, hand crafted, manually verified and signed.

If You have the **DC-1 VLE** in your hands, You are a Music lover. I'm sure you'll love it, and you'll listen to your favourite Music for many years using the **DC-1 VLE**.

Sincerely,
Fabio Camorani

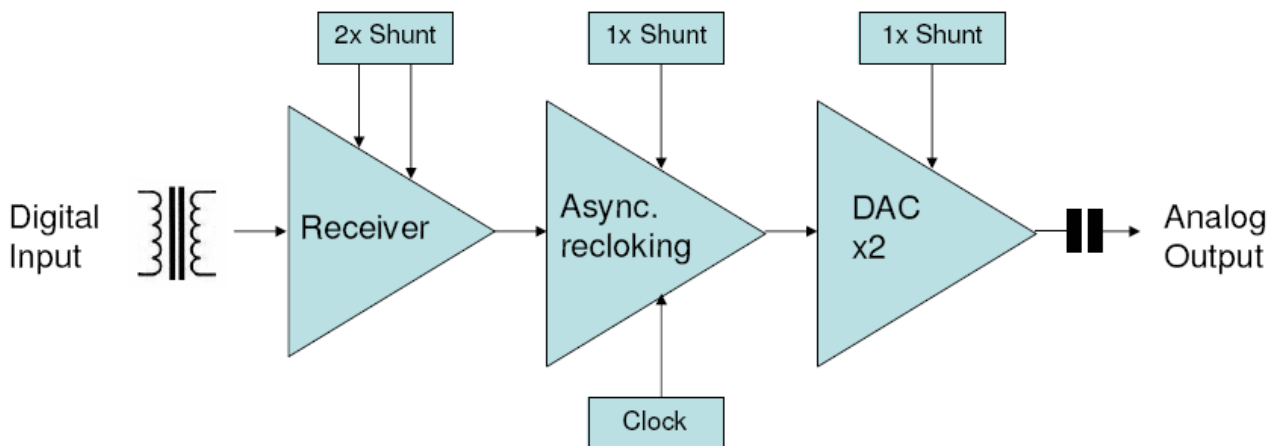
DC-1 VLE D/A AUDIO CONVERTER: PRODUCT PHILOSOPHY AND DESIGN

This is the simplified structure of standard DC-1:



As it can be seen, the original DC-1 did make use of a very simple and effective design (fall 2004). There was only one input (S/PDIF 75 ohms) with a top quality digital transformer. Then a receiver, an asynchronous reclocking circuit, one 16bit d/a converter with **zero-oversampling**, and a simple, Class A output stage. This technique is now rather known (www.sakurasystems.com/articles/Kusunoki.html) and known are also many related designs. A very important aspect of the project was the power supply, with a custom made mains filter, a custom made power transformer and seven (7) regulators, one for each main component of the circuit, instead of two (2) as usually done by other manufacturers. Six (6) of them were shunt type! Only in very few products, no matter the cost, we can find shunt regulation. This kind of regulation is very effective from the sound point of view, but it's more difficult and expensive than the series type.

With the **Upgrade Edition** (fall 2007) some important improvements have been done:



There is still only one input connection, the SPDIF 75ohm, using a gold plated RCA connector with Teflon insulation followed by a pulse transformer of the highest quality, not so common even in high cost products. This component is the top-of-the-line by **Scientific Conversion**, with only 0,5pF (!). We don't use cheap pulse transformers, but the best! This choice is very important to reduce the noise, as shown in AES Journal articles (www.scientificconversion.com). Even if it's clear the advantage, it's not so common to find a digital transformer also in cost-no-object products.

Other than this, the input structure has not been modified.

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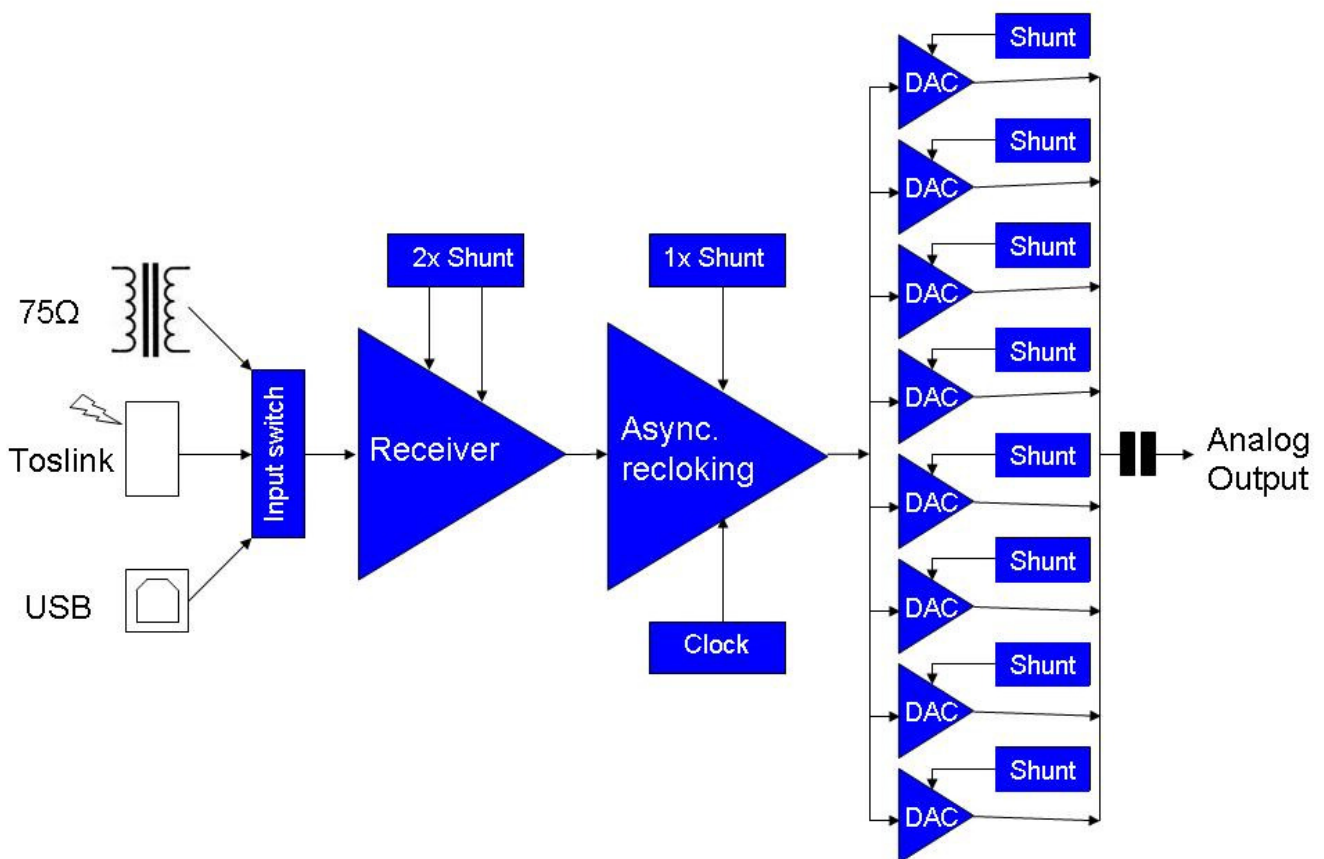
On the contrary, from the dac (d/a converter) everything is different! Diodes have been exchanged with really very special devices. They are fast-soft recovery type in TO-220 case and they have top performance in terms of speed (<25ns) and smoothness, improving in a dramatic way the sonic performance!

While standard **DC-1** used one 16bit d/a converter chip, the **Vpgrade Edition** was using 2 chips in parallel, for better resolution and improved driving capability. Moreover, the shunt regulated power supply dedicated to the dacs have been improved with one more discrete bipolar transistor.

In **Vpgrade Edition** the signal has been taken directly from the dac chips, avoiding any analogue stage or output buffer. A pair of very expensive and exceptional capacitors branded **AudioNautes** connect the dacs to the output RCA connectors. These capacitors were wound onto a nylon core using a 10 μ M (630Vdc) polypropylene film. This winding technique allows the winding to be controlled in terms of winding tension resulting in a tight winding devoid of as many air pockets as possible. Controlling the critical production processes the sonic outputs resulting from resonances within the component are reduced from the level seen within other capacitors. They are really superior and the result of a 2 year research programme. They have very low self-inductance and very low ESR, with very high temperature and frequency stability. Compared to other expensive capacitors, this model is far superior in any aspect, such as micro and macro dynamic, harmonics, micro and macro details. Hand soldered terminations are in pure copper for better sound results.

Another exclusive is the use of a very expensive product, called **HDG** (High Density Graphite), just like the **DC-1**.

With the **VLE** model we are offering much more! Just an extreme version of the concept developed for the **DC-1**. This is the structure of the **VLE**:



First of all, there are three inputs: S/PDIF 75ohm (with a **Canare** true 75 ohm RCA gold plated connector), optical (Toslink) and USB. After the Canare 75 ohm connector there is the top-of-the-line **Scientific Conversion** pulse transformer, of the highest quality, with only 0,5pF (!). The optical connector is Toshiba original. The USB connector has gold plated contacts. The USB signal goes to the USB receiver, that's 16bit 48kHz. The selection among the signals is made through a proprietary input switch. Nothing to do with common solid state switches. The audio digital receiver (with two dedicated shunt regulated power supplies) and the asynchronous reclocking circuit (with another dedicated shunt regulated power supply) are the same used for the other **DC-1** versions. But after the reclocking there are 8 dac chips in parallel, each one with its own shunt regulated discrete power supply with an outstanding **rejection** of -120dB @ 20kHz each!

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The output from the dac chips is simply connected to the output RCA connectors through **AudioNautes** special RED capacitors (already described).

All components are absolute top quality, not common industrial devices, but special devices chosen after listening tests. Resistors outside the audio path are 1% metal film everywhere, but metal oxide in power supply. In the audio path there are 2 resistors only (per channel): one is the fantastic and very expensive **Vishay Naked Bulk Foil** and the other one a **Dale** audio resistors. All final bypass capacitors of the power supplies are very close to the relative part of circuit, to minimize impedance.

The **PCB** follows professional high quality standards and is designed **without edges**. It's **gold plated** in this special version, to maximize audio performance.

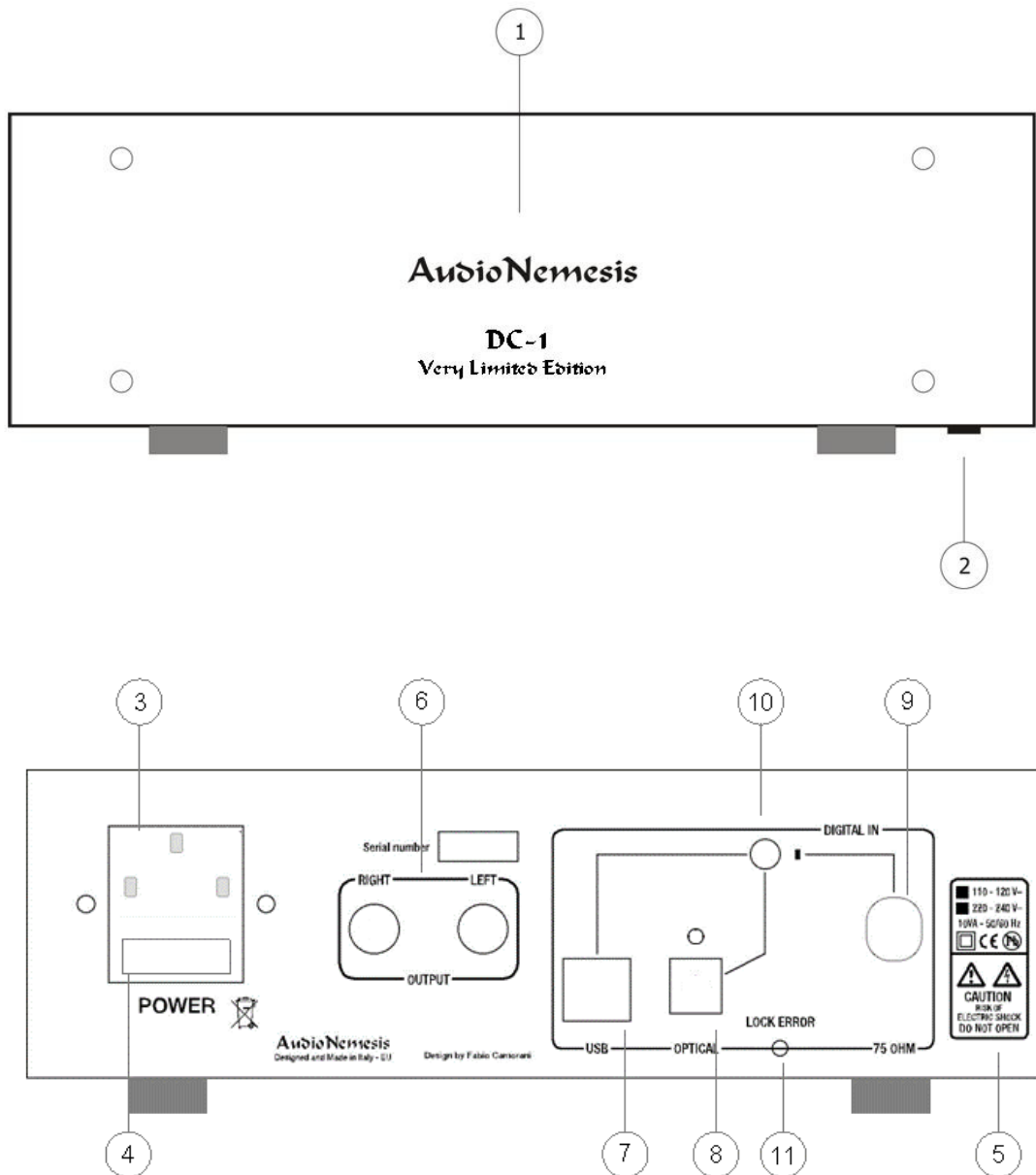
Thanks to the very high quality design and building, the **noise** is very low, lower than high priced products, but without any feedback or feed-forward technique.

This **AudioNemesis DC-1 VLE** had a test of at least **sixty (60) minutes** at the end of the production chain, and it is **individually** checked by Fabio Camorani. A minimum of 100 hours of break-in is recommended, even better if 200 hours. A warm-up of at least 30 minutes is suggested before any use for the best performance.

SPECIFICATIONS

Power Supply:	230/240 Vac 50 Hz +/- 10%
Power consumption:	18 Watts
Frequency response:	20Hz to 20 kHz + 0dB/ -1dB
Output level @ 0 dB:	1,7 Vrms @ 1kHz digital full scale
Output:	Inverting
Converter:	8 multibit converters, 16 bit each
Oversampling:	0 times
THD:	<0.1% @ 1,7 Vrms @ 1kHz
Output impedance:	<2 00 ohm
Input:	Gold plated RCA, Teflon - S/PDIF 75 Ohm - 24 bit/96 kHz Gold plated USB Series B connector 16 bit/48 kHz — USB 1.1 Specifications Toshiba Toslink optical digital
Output:	Gold plated RCA, Teflon - unbalanced
Dimension (WxHxD):	23 x 8,5 x 34 cm.
Weight:	4 Kg
Shipping weight:	4,5 Kg

All specifications can change without notice.



1. **Name *AudioNemesis***
When the item is ON the name turns ON with a blue back-light.
2. **On-switch**
The on-switch is in the lower part of the chassis, front-right side.
3. **Mains connector**
Always connect the power cable with the power switch turned OFF (power switch pushed to the rear side of the chassis)
4. **Fuse**
The mains power fuse is inside the connector. Never change it if not blown. Never open it if the appliance is ON. Always verify the data reported in this manual.
5. **Mains characteristics**
Verify that the data reported on the rear panel of the chassis match the characteristic of the mains line of your country.

6. **Analogue outputs**
Connect the analogue signal cable to these output pins. Then connect the other side of the cable to your preamplifier or integrated amplifier etc. Be sure that the output characteristics of this unit match the input characteristic of the unit you want to connect to.
7. **USB (Type B) input connector**
Connect the USB cable with proper Type B connector to this input pin. Then connect the other side of the cable to your USB source (PC, laptop etc). Be sure that the output characteristics of the unit match the input characteristics of this converter.
8. **Toslink input optical connector**
Connect the optical cable with proper optical connector to this input pin. Then connect the other side of the cable to your CD player or transport. Be sure that the output characteristics of the unit match the input characteristics of this converter.
9. **75 ohm digital input**
Connect the electrical S/PDIF 75 ohm cable to this input pin. Then connect the other side of the cable to your source (CD player, CD transport etc.). Be sure that the output characteristics of the unit match the input characteristics of this converter. A high quality cable with pure 75 ohm male connectors is highly recommended for the highest sound quality.
10. **Input selection switch**
Use this switch to select the source you want to use. The drawing on the panel helps to understand the selection depending on the position of the switch.
11. **Red LED for digital error**
This LED turns ON when the input digital signal is un-correct, not valid or not present.

HOW TO USE THE APPLIANCE

- **How to turn on the converter**
Turn ON the appliance AFTER turning on the CD player / transport first.
- **Mains voltage**
No power cable is offered with this appliance. Please use a good quality power cable: this improves the performance of this d/a converter.
- **Connection cables**
No digital and analogue cable is offered with this appliance. Please use good quality cables both for digital and analogue connections. Using good quality cables may give a very big improvement in sound quality reproduction and gives you even better Music listening sessions.
- **Mains filtering**
In this appliance there is a high quality mains filtering unit. This is a custom design to assure the highest final quality and to meet CE requirements. Before using an external filter, conditioner, stabilizer or any other appliance please do a deep listening session to verify effectiveness, to avoid sound quality problems.
- **Cleaning**
Use a high quality lint-free cloth that has not been treated with chemicals of any kind. Dampen the cloth with warm water only. Do NOT use cleaning agents of any kind, such as alcohol or other common cleaning products.

TROUBLE-SHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
The appliance does not turn on	Main voltage is not present, the power cable is not properly connected or it is damaged	Be sure that the turn on switch is in ON position. Verify that the power cable is properly connected and that it's in proper working condition.
There is no output signal	The digital cable is not properly connected or it is damaged	Verify that the digital cable is properly connected and that it's in proper working condition. Turn off then turn on the appliance.
The LOCK ERROR LED is flashing	The CD player has the PAUSE function active, the disc is damaged or is not original and the transport can't read it	Press PLAY in your CD player, use original discs
The appliance does not work properly, it has distortion, it works to strokes	Main voltage with noise or incorrect main voltage	Remove the sources of noise or use stabilizers, verify that the appliance is connected to the right main voltage as reported by the rear label (5)

For any other problem, please contact your dealer.

WARRANTY RECORD FORM

Model: Audio D/A Converter DC-1 Very Limited Edition

S/N:

/40

Owner's information

Last name First name.....

Address.....

City ZIP Code.....

Country

Purchasing:

[Empty box for purchasing information]

Warranty: This appliance has a limited warranty of 3 years from the date of purchasing on labour and parts . The mechanical and electronic components of this appliance are warranted to be free of defects in material and workmanship for that period. The warranty does not include damage due to misuse or abuse or modified products and also does not include consequential damage. The warranty begins on the date of the original retail purchase, as noted on the bill of sale or receipted invoice from an authorized **AudioNemesis** dealer or distributor.

Privacy: All data from this document will be used for standard administration records and warranty and will be protected and taken secure.

Note: Every effort is made to ensure the highest standard of quality. The producer reserves the right to change the specifications without any notice. The specifications and the design of the device may differ from the information given in this manual.