AYA III

S/PDIF D/A Converter

User Manual

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IMPORTANT PRECAUTIONS

1. Do not expose this device to rain or moisture, excessive heat or mechanical force.

2. Use this device exclusively with specified mains voltages.

3. Unplug the device from the wall outlet during a lighting storm.

To prevent the risk of electric shock, do not remove the cover!
This device contains no user serviceable parts inside.
Refer servicing to qualified servicing personnel only.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Thanks for choosing AYA III Digital to Analog converter.

This User Manual comprises introducing information on use and performance of AYA III. For more info please refer to the Audial site, www.audialonline.com/html/ayaIII/, or send your questions to info@audialonline.com.

Getting started

Other than D/A converter itself, a packing box is supposed to comprise:

1. Mains cord (for the units sold in Europe)
2. RCA female to BNC male adapter
3. Printed copy of this manual
4. Invoice (for units sold directly by Audial).

RCA to BNC adapter is supplied to help experimenting with different S/PDIF cables since these, per rule, come fitted with RCA connectors. This adapter is not a long term solution. The S/PDIF transmission line is supposed to be 75 Ohm line, and hence it is highly recommend to use the real 75 Ohm BNC plugs. Regardless of what you may be told from time to time, the RCAs don't belong here.

Use of mains cable of higher quality than the one supplied is also highly recommended, whether an after market or DIY one. Solid core cable is suggested.

Connections

No special knowledge is required to connect the AYA III DAC into the system.

Mains connector is standard IEC C14 (cable is supplied, as stated above).

The S/PDIF (BNC) input is intended for use with dedicated CD transport, or appropriate digital output found on the integrated CD players, or any other device comprising adequate S/PDIF output (soundcards etc.).

Everyday use

The AYA III is easy to use device, and it has only a mains switch, located at the rear panel, within the block which also comprises IEC mains connector and fuse.

The LE diode located at the front panel signals by the red color if the unit is powered up. Once the DAC locks onto the incoming S/PDIF stream, the color of the LED changes to yellow / orange.

The device performance is guaranteed right from the start, however the AYA III may need a week or two of burning in, to achieve full subjective sonic performance. Leaving the AYA III constantly powered on for days or weeks is however not recommended, because the TDA1541A D/A converter chip, used in this device, utilizes a classic TTL architecture, and thus dissipates more heat than is usual for devices of this kind. After initial few weeks of burning in, it will be normally enough to leave the unit powered on for about one half an hour before critical listening.

Earthing

The chassis of AYA III requires connection to the safety earth, and this is normally accomplished by using a three prong mains cable, plugged into the mains socket with safety earth connection.

It is however important to remember that the components of galvanically coupled system require only one connection to the safety earth. If two or more of them use safety earth, a ground (earth) loop occurs, deteriorating the system performance, by, inducing the buzz and noise.

Still, since the input of the AYA III is transformer coupled, the S/PDIF source can use safety earth regardless of the AYA III.

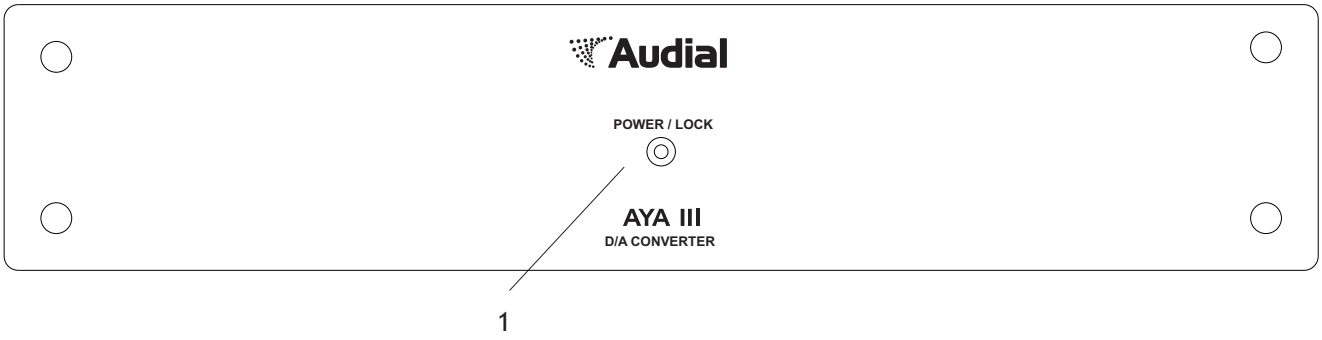
The output ground of AYA III is however galvanically coupled, and if the downstream system already uses safety earth, the AYA III should not do. In this case the wall socket without safety earth, or two prong mains cable should be used instead. If the rest of the downstream system doesn't use the safety earth, the AYA III must do.

Warranty

Audial claims proper working of this product for two years. Audial is obliged to correct any malfunction within this period, at no charge, either by competent repair service, or by swapping the sold unit by the new one.

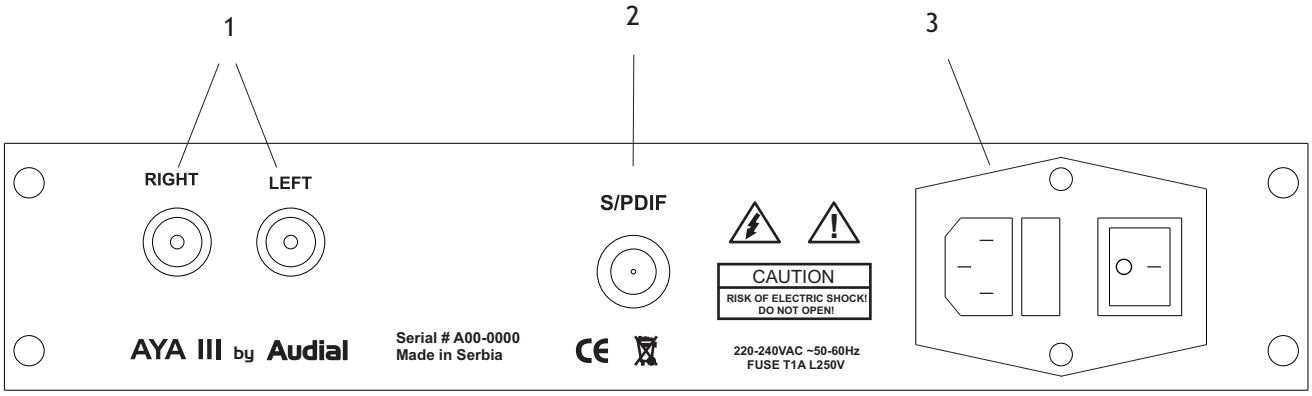
For the units sold directly by Audial invoice is also guarantee certificate. Warranty is fully transferrable from original to subsequent owner(s).

Front Panel



1 - Power - S/PDIF lock LED indicator

Rear Panel



1 - Output connectors (RCA)
2 - S/PDIF input connector (true 75 Ohm BNC)
3 - Mains connector (IEC C14) with switch and fuse

Specifications

INPUT:
75 Ohm S/PDIF electrical, BNC connector

D/A CONVERSION:
16 bits, without oversampling

SAMPLING FREQUENCY:
up to 96kHz

OUTPUTS:
Unbalanced RCA, 2.1V RMS

OUTPUT IMPEDANCE:
160 Ohm

FREQUENCY RESPONSE:
Sin(x)/x equivalent:
@ fS=44.1kHz: -3.2dB @ 20kHz
@ fS=88.2kHz: -0.8dB @ 20kHz

TRANSIENT RESPONSE:
Clean with no overshoot or ringing
(figures 1 & 2)

ABSOLUTE PHASE:
Correct

HARMONIC DISTORTION (@ 1kHz):
0.11% @ -6dBFS (figure 3)
0.02% @ -20dBFS (figure 4)
0.63% @ -60dBFS (figure 5)

INTERMODULATION DISTORTION (CCIR):
0.25% (19kHz+20kHz, -6dBFS each)

MAINS VOLTAGE:
220-240VAC, 50-60Hz , IEC (C14) connector
110-120VAC available upon request

OUTER DIMENSIONS (W x D x H):
277 x 173 x 56 mm
(excluding connectors and switch)

WEIGHT:
3 Kg

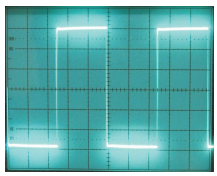


Figure 1: 1kHz square wave

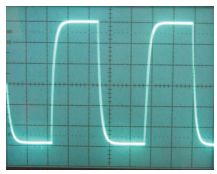


Figure 2: 20kHz square wave

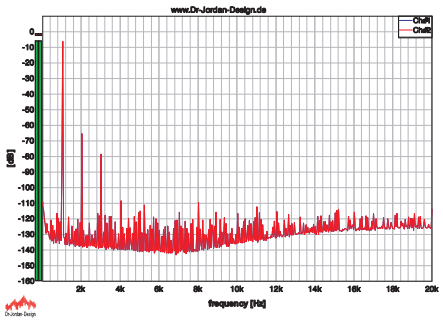


Figure 3: FFT analysis of
dithered sine wave 1kHz @ -6dBFS

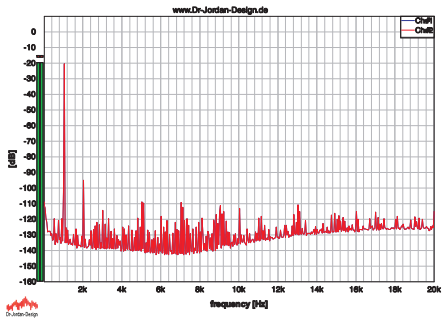


Figure 4: FFT analysis of
dithered sine wave 1kHz @ -20dBFS

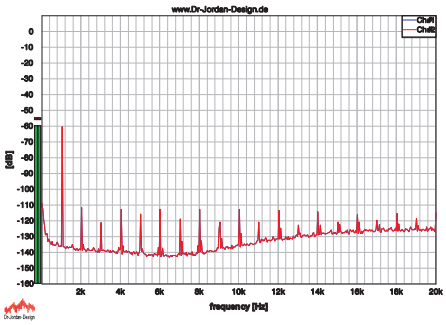


Figure 5: FFT analysis of
dithered sine wave 1kHz @ -60dBFS