

# **Audial**

## AYA 4

### USER MANUAL

Revision 0, October 2018

This manual comprises introducing information on use and performance of this device. For more information please refer to the Audial web site, or send your questions to [info@audialonline.com](mailto:info@audialonline.com).

## IMPORTANT!

1. This manual is a guide only.
2. Do not expose this device to rain or moisture, excessive heat or mechanical force.
3. Use this device exclusively with specified voltages.
4. Unplug the device from the wall outlet during a lighting storm.

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[www.audialonline.com](http://www.audialonline.com)

## AYA 4 DAC

Audial AYA 4 is a high quality, TDA1541A based non-oversampling D/A converter, with USB and S/PDIF inputs.

The AYA 4 USB input stage operates as asynchronous (master) USB device, so it also generates the clock signal for D/A conversion.

Two low jitter clocks are included, one that works with 44.1/88.2/176.4/352.8 kHz, and the other that works with 48/96/192/384 kHz audio sampling frequencies. This way the unit achieves clean clocking scheme, and all the audio clock signals in the system are generated only by frequency dividing, and not by using PLL synthesizers.

The units with 11.2896/12.288 MHz master clocks can accept up to 192 kHz, and units with 22.5792/24.576 MHz up to 384 kHz audio sampling rates.

The USB stage also provides galvanic decoupling between the USB and D/A stage, thus also separating PC from audio circuits.

The S/PDIF stage provides real 75 Ohm BNC, transformer coupled input, and is operational up to 96 kHz.

Optionally, AYA 4 can provide PCM direct input to TDA1541A, by using PCB U.FL connectors, and it can accept I2S or simultaneous data protocol. The information about such optional features is provided separately, to the individual customers.

## USING THE AYA 4

AYA 4 mains connector and switch are located on the back plate, while the USB / SPDIF input selector is located on front plate, along with the LED indicator, which lights green for USB, and orange for S/PDIF input.

AYA 4 DAC is easy to use device, and for normal use it requires no special maintenance or care.

It is however not recommended to leave the AYA 4 permanently powered up, because its D/A converter chip (TDA1541A) is a classic TTL architecture, so it dissipates more power than it is usual for devices of this kind these days. Normally, leaving the AYA 4 powered off overnight will ensure many years of reliable operation.

AYA 4 achieves claimed technical performance (distortion, frequency response etc.) right from the start, however it needs a couple of weeks of burning in to perform its best in subjective sonic terms.

## 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.

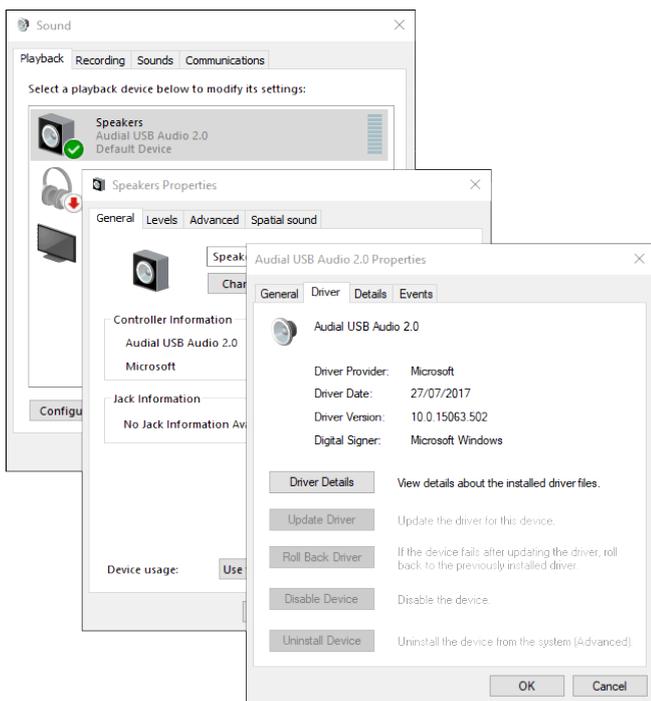
For the units sold directly by Audial, invoice is also guarantee certificate. Since Audial maintains own data base of directly sold units, the original buyers in most cases won't need it. Warranty is still fully transferrable from original to subsequent owner(s), however in this case we will probably ask for the invoice.

## USB AUDIO CLASS 2.0

AYA 4 USB stage employs USB Audio Class 2.0 definitions.

Mac OS X and Linux are natively USB Audio Class 2.0 compliant for several years now, and this device hence does not require special driver when used with Mac OS X or Linux.

Since September 2017, Windows 10 (1703) also supports USB Audio Class 2.0 definitions, so the AYA 4 is plug and play with recent Windows 10 too. Once it is connected to Win 10 machine, the small window will pop up in the bottom right corner of the screen, reporting about the initial connection routine, and once this process is finished, the device can be found as playback audio device, available in the system.



## DEDICATED WINDOWS DRIVER

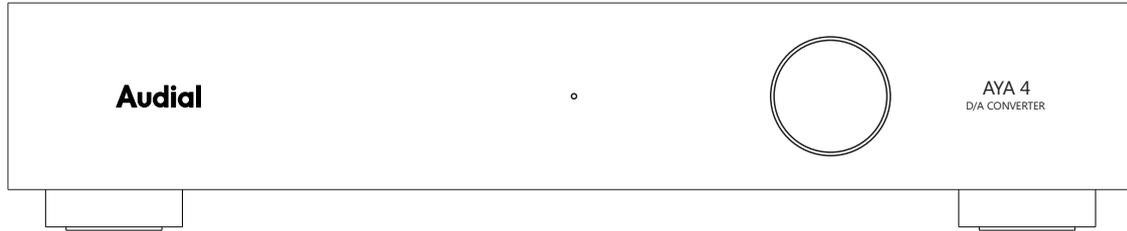
In addition, Audial provides dedicated Windows driver for this device, which is still necessary with earlier Windows versions. This driver also provides additional functionality such as firmware update, ASIO interface, buffer length control, and it can be generally preferred soundwise.

Users can download this driver from Audial web site. Driver version 1.26 can be installed to Windows XP, Vista, 7, 8, 8.1 and 10. Later driver version 2.10 however improves on compatibility with later PC systems, and can be installed to Windows 7, 8, 8.1 and 10. All driver versions are compatible with both 32 and 64-bit Windows. Please however note that the driver version 2.10 does not support 4 channel functionality.

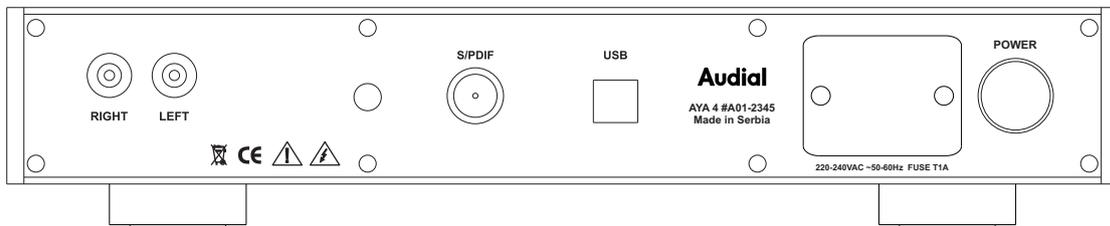
To install the driver, please unzip provided file, and run setup.exe. Installation window will pop up, and at one stage you will be asked to connect the device. Also, during this process, depending on your Windows version and security settings, you might be asked a couple of times to allow the installation, so please do so. These windows will look like this.



Once the installation is complete, you can configure your settings by using the control panel, available in Windows Start Menu -> Audial.



AYA 4 front plate



AYA 4 back plate

From left to right: RCA output connectors,  
S/PDIF input connector, USB input connector,  
mains connector, mains switch.

# SPECIFICATIONS

## INPUTS:

- USB 2.0, supports 2.0 Class Definitions for Audio Devices, asynchronous operation; Fs max 192 kHz or 384 kHz, depending on master clock frequencies
- S/PDIF, 75 Ohm BNC; Fs max 96 kHz
- PCM direct, I2S or Philips simultaneous data protocol, U.FL PCB connectors (optional)

## OUTPUT:

RCA, 2.1 V RMS, output impedance 130 Ohm

## FREQUENCY RESPONSE:

Sin(x)/x equivalent:

@ fS=44.1kHz: -3.2dB @ 20kHz

@ fS=88.2kHz: -0.8dB @ 20kHz

@ fS=192kHz: -0.2dB @ 20kHz

@ fS=384kHz: -0.1dB @ 20kHz

## TRANSIENT RESPONSE:

Clean with no overshoot or ringing

## ABSOLUTE PHASE:

Correct

## HARMONIC DISTORTION (@ 1kHz):

0.12% @ -6dBFS (I/V dominated)

0.06% @ -12dBFS (I/V dominated)

0.9% @ -60dBFS (D/A dominated)

## INTERMODULATION DISTORTION (CCIR):

0.2%

## MAINS VOLTAGE:

220-240VAC/50-60Hz or 110-120VAC/50-60Hz

## DIMENSIONS (W x D x H):

330x 215 x 66 mm, including feet, but excluding knob and connectors

## WEIGHT:

Approx. 3 Kg



