TAGA
HARMONY
To Achieve Glorious Acoustics

DA-300 v.3
DIGITAL-TO-ANALOG CONVERTER

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High Fidelity Audio

Digital to Analog Converter   DA-300 v.3

32bit/384kHz

Instruction Manual

Introduction

Thank you for purchasing this TAGA Harmony high-resolution digital-to-analog converter.

DA-300 v.3 is a miniature Digital-Analog Converter, which converts digital audio signal from any digital source to high class analog audio with clearer, richer and more powerful sound.

It allows to connect a range of digital source devices via one of 3 digital inputs (USB, Coaxial and Optical) and a built-in reference high-resolution 32bit / 384kHz PCM, DSD USB-DAC (ESS Sabre32 Reference ES9018K2M with patented Time Domain Jitter Eliminator and SA9227 chip) will always provide the best sound performance.
The USB DAC input is a perfect choice for playing digital music from computers, music servers or compatible smartphones.

Analog output with high-end solid machined brass RCA sockets ensures the best signal transfer.

DA-300 v.3 offers stunning sound performance embedded in a very rigid and luxurious steel-aluminum casing.

Thanks to its small dimensions it can be easily added to any audio system, a computer or a video game console – it can be almost "invisible" but can change your digital music to a thrilling music experience.

Cleaning
Do not use strong or abrasive cleaners. Use a dry, soft cloth for cleaning.

Specifications
Full technical specifications are available on the **www.TagaHarmony.com** website.

Contents

Safety Instructions

IMPORTANT
READ THIS SECTION CAREFULLY BEFORE PROCEEDING!

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT REMOVE CHASSIS (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The triangle containing a lightning symbol is intended to alert the user to the presence of uninsulated dangerous voltages within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

An exclamation mark in a triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE, AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.

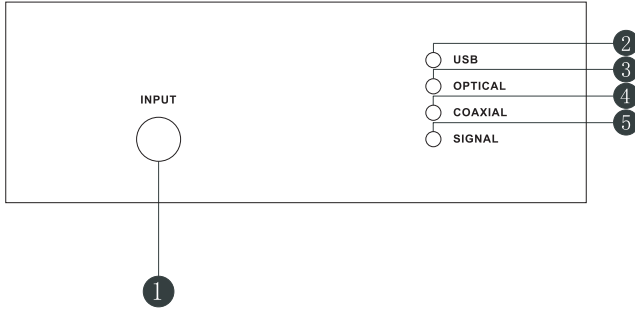**CAUTION:** TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE THE FUSE ONLY WITH THE SAME AMPERAGE AND VOLTAGE TYPE. REFER REPLACEMENT TO QUALIFIED SERVICE PERSONNEL.

WARNING: UNIT MAY BECOME HOT. ALWAYS PROVIDE ADEQUATE VENTILATION TO ALLOW FOR COOLING. DO NOT PLACE NEAR A HEAT SOURCE, OR IN SPACES THAT CAN RESTRICT VENTILATION.
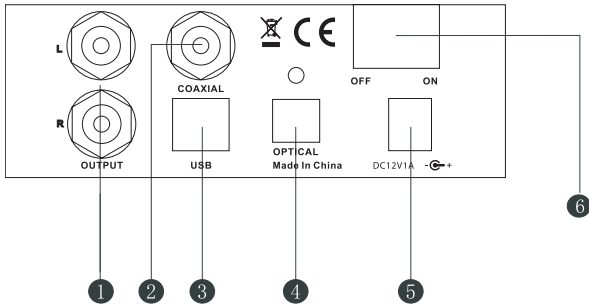
Important Safety Instructions

1. Read Instructions – All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Cleaning - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp, soft cloth for cleaning.
6. Water and Moisture - Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sing or laundry tub; in a wet basement; or near a swimming pool; and the like.
7. Accessories - Do not place this product on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket or table recommended by the manufacture, or sold with the product. Any mounting of the product should follow manufacture's instructions and should use a mounting accessory recommended by the manufacture.
8. Ventilation - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other smimilar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacture's instructions have been adhered to.
9. Power Sources - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
10. Grounding and Polarization - This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
11. Power-Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
12. Lightning - For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable systems. This will prevent damage to the product due to lightning and power-line surges.
13. Overloading - Do not overload wall outlets, extensions cords, or integral convenience receptacles as this cas result in a risk of fire or electric shock.
14. Object and Liquid Entry - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Do not expose this apparatus to dripping or splashing, and ensure that no objects filled with water, such as vases, are placed on the apparatus.
15. Servicing - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
16. Damage Requiring Service - Unplug this product from wall outlet and refer servicing to qualified personnel under the following conditions:
    • When power supply cord or plug is damaged;
    • If liquid has been spilled, or objects have fallen into product;
    • If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will require extensive work by a qualified technician to restore the product to its normal operation;
    • If the product has been dropped or damaged in any way;
    • If the product exhibits a distinct change in performance - this indicates a need for service.
17. Replacement Parts - When replacement parts are required, be sure the technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized subsitutions may result in fire, electric shock, or other hazards.
18. Safety Check - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
19. Wall or Ceiling Mounting - The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
20. Heat - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.
21. [Refers to products equipped with vacuum tubes] Tube Cage - For your safety and to protect the vacuum tubes this product may be equipped with the factory installed vacuum tube cage.
    It is not recommended to remove the cage unless it is required to change the vacuum tubes.
    When the cage is removed - do not touch the vacuum tubes - they may be hot and burn the skin!
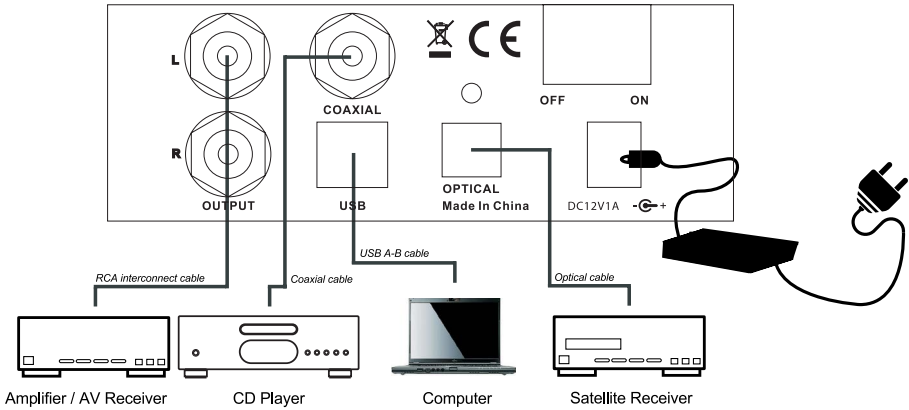
Front and Rear Panel

Front Panel:

1. Input Select Button
2. USB Input LED Indicator
3. OPTICAL Input LED Indicator
4. COAXIAL Input LED Indicator
5. SIGNAL Status LED Indicator

Rear Panel:

1. Analog Stereo RCA Line Output
2. COAXIAL Input
3. USB Input
4. OPTICAL Input
5. DC Adapter Input Socket
6. Power Switch (I – ON / O – OFF)

Hooking Up the DAC

Amplifier / AV Receiver   CD Player   Computer   Satellite Receiver

1. Make sure the DAC is turned off (the Power Switch is in the top position "O - OFF" and the DC Adapter Cable is removed).
2. Make sure that your main audio amplifier or receiver, to which want to connect this DAC, is turned off.
3. Using an RCA interconnect cable (not supplied with this product) connect OUTPUT of the DAC to the line input of your main audio equipment (amplifier, AV receiver, powered speakers etc.).
4. If you want to play a digital audio source equipped in a Coaxial output (CD player, video console etc.) : using a digital coaxial cable (not supplied with this product) connect it to the COAXIAL Input.
5. If you want to play a digital audio source equipped in an Optical output (Satellite receiver etc.) : using a digital optical cable (not supplied with this product) connect it to the OPTICAL input.
6. If you want to play music from a computer : using a A-to-B USB 2.0 digital cable connect the computer to the USB Input (check "USB connection" for more details).
7. Your DAC is ready for operation.

Operation

1. Plug the DC Adapter Power Cable to the DAC and connect the adapter with the electrical outlet.
2. Turn on the DAC – press the Power Switch (the Power Switch should be in the position "I - ON").
3. The USB LED indicator will lit red and the DAC is ready to work with a computer. The USB input is set as a factory default each time the DAC is turned on.
4. By pressing Input Select button, select one of digital audio sources you want to play. Make sure the audio source is properly connected to the rear panel inputs. The selected source is indicated by one of LED indicators on the front panel.
5. Turn on your main audio equipment (amplifier, receiver, powered speakers etc.), choose the line input to which this DAC is connected, turn on the audio source and start playback.

Note!
Turn ON procedure: make sure to turn on the DAC firstly and then your main audio equipment (amplifier, receiver, powered speakers etc.).
Turn OFF procedure: make sure to turn off the DAC after your main audio equipment (amplifier, receiver, powered speakers etc.) is off.

USB Connection

Computers with Windows®

1. Install the BRAVO-HD Audio driver – applies only for the Windows® operating system.
Note! At the time of writing this manual the driver is not required for MAC® computers.
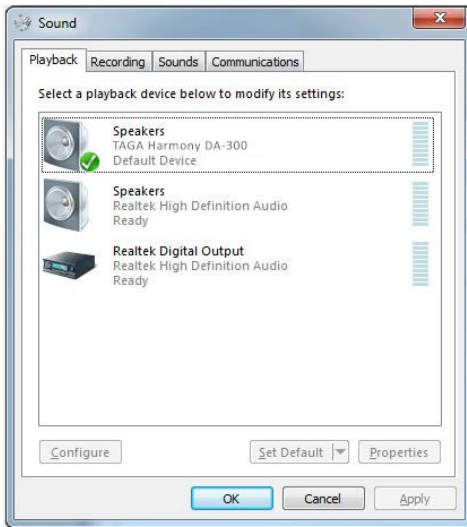* The driver package as a compressed zip file is available for download on www.TagaHarmony.com on page of this product.
* After downloading extract the files from the zip file.
* Run the Setup file located in the unzipped folder and follow the installation instructions on the screen.
* When the installation finishes a shortcut icon "BRAVO-HD Audio CPL" will be created on the desktop and the restart wizard will appear. Make sure to restart the computer after the installation is completed.
2. After the computer is restarted connect it with the DAC via the USB cable.
3. The computer will recognize the DAC as „TAGA Harmony DA-300" and automatically apply it as the audio output device. You can check the setting through the Control Panel->Hardware and Sound–>Sound->Manage Audio Devices (Figure 1).

/Figure 1/

If the „TAGA Harmony DA-300" is not selected then locate and highlight it and click "Set Default".
To enjoy the best sound quality, we suggest to change a default format (bit and sample rate) of your audio device to the highest available – right-click on the „TAGA Harmony DA-300" device, choose Properties and then Advanced tab and change Default Format.
4. You can now listen to the playback from the computer and DAC.
5. You can also control playback settings through the USB BRAVO-HD Audio Device Control Panel.

USB Connection

* Start "BRAVO-HD Audio CPL" from the desktop or program menu. The BRAVO-HD Control Panel will appear (Figure 2).
* If the DAC is switched on and connected to the computer the panel will display:
- The current default format (sample and bit rate) as selected in the Windows® system. Changing will affect a default format of your audio device in the Windows® system.
- The current setting of playback via ASIO (preferred bit rate and buffer size). Click to change.
- In the playback mode the current format (PCM or DSD).
Note!
* The bit rate setting should be the same as or higher than the playback file. Otherwise the bit rate or output is lower than the original.
* Setting the smaller buffer size for a higher resolution music file may cause noises or interruption. Set the buffer size to bigger and restart the playback.

/Figure 2/

USB Connection

Installation and Setup to play PCM 32bit / 384kHz and DSD files (Windows®)
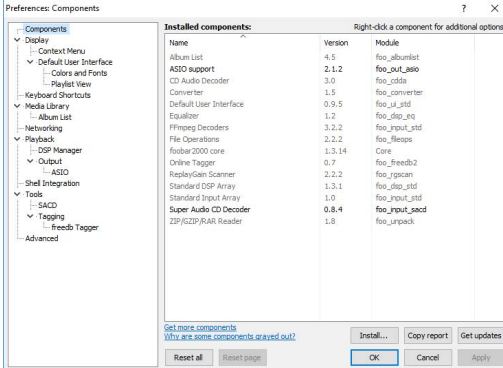You can use a freeware PC music player "foobar2000" for Windows® to play 32bit /384kHz PCM and DSD files through the DAC.
Install "foobar2000" for your Windows® PC:
It can be downloaded from http://www.foobar2000.org/
Install the following foobar components in the Preferences section: "ASIO support" and "Super Audio CD Decoder" (Figure 3).
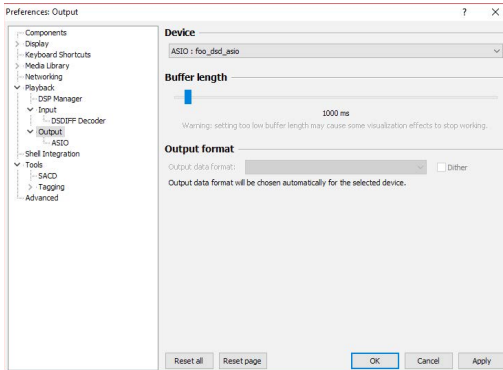**Note!** At the time of writing this manual the "Super Audio CD Decoder" component version 0.8.4 was tested. Latest versions may not support all DSD formats.
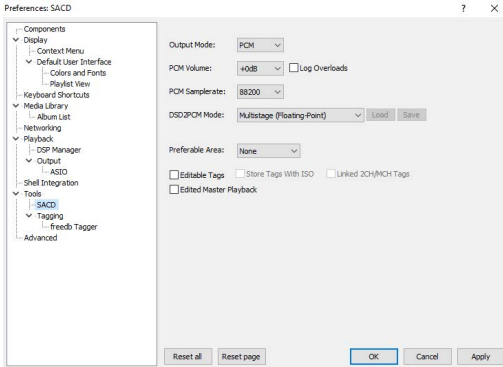

/Figure 3/

32bit/384kHz PCM files

To play 32bit/384kHz PCM files run the program and set Preferences->Playback->Output->Device to "ASIO : foo_dsd_asio". Set Buffer lenght to 1000 ms (Figure 4) and Preferences->Tools->SACD->Output Mode to „PCM" (Figure 5).

/Figure 4/

USB Connection

/Figure 5/

DSD files
To play DSD files run the program and set Preferences->Playback->Output->Device to "ASIO : foo_dsd_asio" and Preferences->Tools->SACD->Output Mode to "DSD".
Note! Windows® : DSD supports DoP and Native. MAC® : DSD supports DoP.

The current format being played (PCM or DSD) will be displayed in the left bottom corner (under "Buffer size") of the USB BRAVO-HD Audio Device Control Panel.
Please refer to "foobar2000" instruction manual for more information about settings and operation.
Note! Operation and user interface may vary depending on your Windows® version.
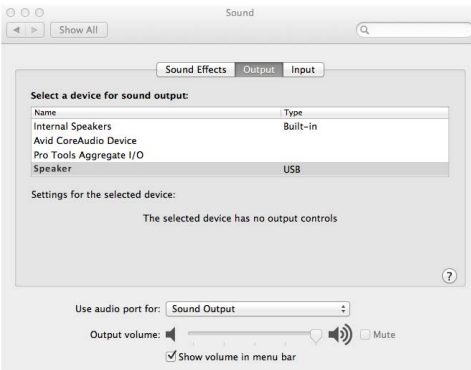
Trademark notice:
Windows® is a registered trademark of Microsoft Corporation in the United States and/or other countries.
MAC® is a trademark of Apple Inc., registered in the U.S. and other countries.

MAC® computers (no driver required)
1. Go to System Preferences, click on Sound and set Speaker to USB. Set the volume control to Maximum.
Note! You may also need to adjust the volume in your music player software.

/Figure 6/

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USB Connection

Depending on the signal format the Signal Status LED indicator will lit in different colours.

PCM files

Signal Led color	Format
Red,Green with Blue	44.1kHz / 48kHz
Green	88.2kHz / 96kHz
Green with Blue	176.4kHz / 192kHz
Blue	352.8kHz / 384kHz

DSD files

Signal Led color	Format
Red with Blue	DSDx64 (2.8Mhz)
Red with Green	DSDx128 (5.6MHz)
Red	DSDx256 (11.2MHz)

Specifications

DAC Resolution:	ES9018K2M with SA9227 chip USB input: Asynchronous 32bit / 384kHz PCM 192kHz, 352.8kHz, 384KHz DSDx64 (2.8Mhz), DSDx128 (5.6MHz), DSDx256 (11.2MHz) OPTICAL & COAXIAL input: Asynchronous 24bit / 192kHz
Inputs:	USB (for computer) Optical, Coaxial
Outputs:	RCA stereo
Frequency Response:	15Hz - 30kHz
Signal/Noise ratio:	129dB (A-Weighted)
Harmonic Distortion & Noise (THD+N):	127dB
Dynamic Range:	≥ 115dB
Inter channel Crosstalk:	≥ 80dB (1kHz)
Pass Band Gain Inequality:	+/-0.5dB
Channel Gain Inequality:	< 1dB
Output Voltage:	2V
DC Adapter, Power Consumption:	DC 12V, 6W
Dimensions (H x W x D):	5.4 x 11.3 x 11.3 cm
Weight (net):	0.7 kg / pc.

We reserve the right to change the technical data and the design of the product without notice as a result of further development.

Notes

Notes

We strongly advise to contact a professional installer or dealer in order to install TAGA Harmony products.

We recommend using high quality TAGA Harmony cables and other installation accessories.

Kit Content:

DAC	1EA
DC Adapter	1EA
Power Cable	1EA
USB Cable	1EA
Instruction Manual	1EA

www.TagaHarmony.com