Silver Series

Odéon-Ag - Owner's Manual

24 bit, 192KHz / SACD Digital to Analog Converter
with Solid-Tube ™ Technology

Birdland Audio
The way music should sound

http://www.birdland.com

Dear Audiophile,

On behalf of Birdland Audio, I would like to thank and congratulate you on your acquisition of our greatest Digital-to-Analog Converter, the *Odéon-Ag*. As digital techniques have greatly improved over the past few years and with the recent buzz around DVD 192KHz and SACD, we wanted you to be ready for the next level of digital audio with the best quality DAC we could provide at the most reasonable price.

The *Odéon-Ag* reflects our latest research in digital filtering techniques. Not only does it convert any digital format at sampling rates of 32KHz to 192KHz but it also up-samples digital input to virtually recreate 24 bits, if the input data path is less, while oversampling the input frequency by up to four times (4x). The *Odéon-Ag* takes advantage of our 18 years of experience and includes our highly acclaimed Solid-Tube™ output stages giving you the most natural sounding DAC available today at any cost. Great Improvements have been made to the power supplies and other areas bringing you an incredibly panoramic sound stage.

For the last couple of years, many audiophiles have been waiting for the next high-end digital audio format to surface. We believe the *Odéon-Ag* is the ideal answer thanks to the wide variety of digital formats supported. Its 24 bits digital upgrade filter will transform the CD collection.you already own to as close to nirvana as possible and, at the same time, bring tears to your eyes as you experience high resolution 24 bits audio.

I am sure that you will appreciate the *Odéon-Ag* as much as I do and wish you many hours of pure pleasure as you listen to *The way Music Should Sound*.

Sincerely,

Gilles Gameiro
President / Design Engineer

Table of Contents

1 - Safety instructions and important notes

The *Odéon-Ag* 24 bit digital-to-analog converter has been designed with safety in mind. Improper use however could result in electric shock or fire hazard. Please read the following safety instructions very carefully.

• **Do not remove the unit's cover** as you will be exposed to dangerous voltages which may **result in electric shock or death**. Opening the cover will also void the warranty. Refer servicing to qualified technicians only.

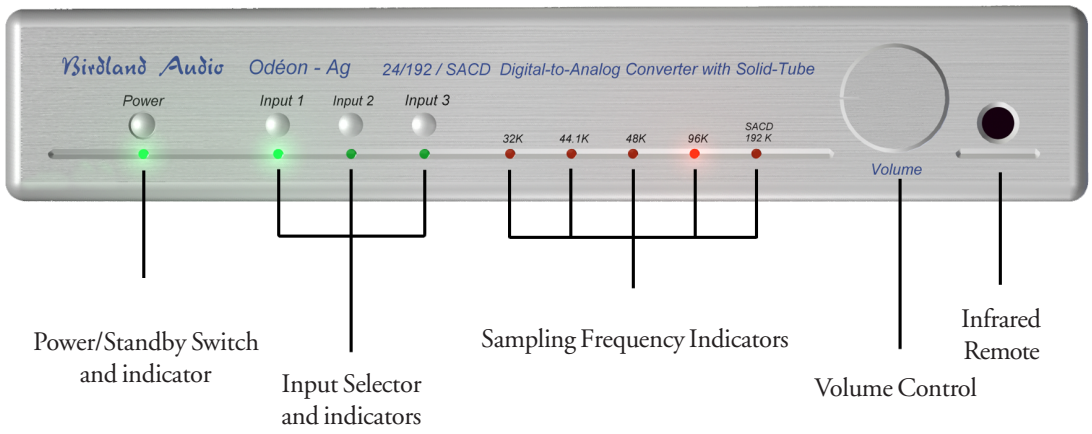
• When connecting components to the *Odéon-Ag* DAC, it is a good idea to turn the entire system off. For added protection, you may choose to disconnect the *Odéon-Ag* from the wall outlet if you are planning to leave it unattended for a long period of time or during storms. This may prevent damage due to lightning.

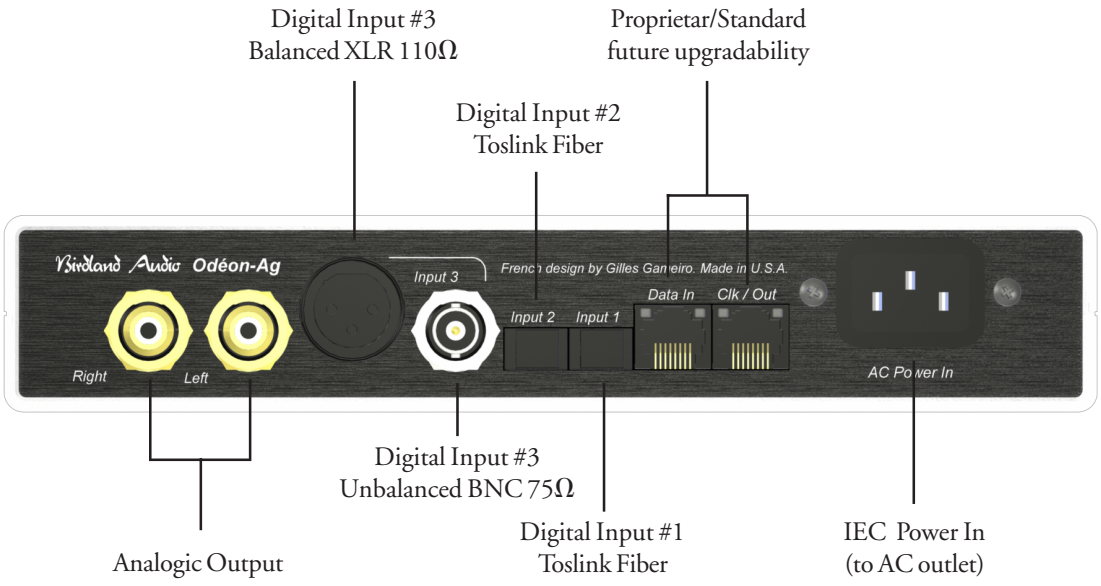
• To reduce the risk of fire or electric shock, do not expose the *Odéon-Ag* to rain or heavy moisture. Wait at least one hour before plugging the unit in after transferring it from a cold place to a warmer room allowing for internal condensation of water to dissipate. Do not use the *Odéon-Ag* near water sources such as bath tubs, sinks, wash bowls, swimming pools, or other sources that may lead to getting water in the unit. Do not spill liquid of any kind on the unit. Use a simple damp soft cloth to clean. Do not use liquid or abrasive cleaners and make sure the *Odéon-Ag* DAC is not connected to the electrical outlet before and while cleaning it.

• The *Odéon-Ag* does not generate excessive heat dissipation and therefore does not have any vent openings for cooling but it does require about one inch of open space above and on the sides. Do not cover the unit. It should not be used in a built-in installation such as a bookshelf or rack unless proper ventilation is provided. Keep the *Odéon-Ag* DAC away from heat sources such as radiators, space heaters, stoves, or other sources of high heat.

• When using the *Odéon-Ag* connected directly to an amplifier (without a preamplifier) it is recommended to always lower the volume knob to the minimum before turning the unit on. Failing to do so could send high audio levels to the amplifier and could **overload and damage the amplifier or speakers, or even cause hearing damage**.

2 - Identification of controls





3 - Understanding the Odéon-Ag

3.1 - Functionality

The *Odéon-Ag* is a 24 bit Digital-to-Analog Converter (DAC) which can convert digital formats up to 24 bits at sampling frequencies of 32KHz to 192KHz. It was designed to be upgradable to support SACD when such formats are available outside of the players. It supports any combination of the above resolutions / sample rates and can be connected to most digital sources.

Common digital audio sources include CD transports or players, DVD players, DAT tape machines, satellite receivers, digital radios and Digital Audio Processors. These sources can be connected to the *Odéon-Ag* inputs using either a Balanced XLR digital interconnect cable (commonly called AES/EBU), a BNC digital interconnect cable (commonly called S/PDIF), or a fiber optic link (commonly called Toslink). A BNC to RCA adapter is also provided with the *Odéon-Ag* to allow the use of non impedance controlled RCA digital connections.

The Right and Left outputs on the back of the unit provide the resultant analog signal (from the digital input conversion) and can be connected directly to amplifier blocks, to a preamplifier, or to an integrated amplifier. When using the *Odéon-Ag* with a preamplifier or integrated amplifier the volume knob should be set to the 3 O'clock position.

The *Odéon-Ag* is the result of out latest research in both Digital and Analog domains along with the highest quality components providing you with the most natural sounding DAC you can get at any cost. As its predecessor, it also upgrades the input to virtually create 24 bits out of any lesser resolution but it also oversamples the input sampling frequency by up to 4 times. By using this specialized circuitry, the *Odéon-Ag* is able to further improve the conversion process by minimizing artifacts caused by anti-aliasing present in 16 bit CDs.

Of course, the *Odéon-Ag* also includes our highly acclaimed Solid-Tube™ technology in the output stage. Solid-Tube™ is our building block technology for analog stages. It is a clever and innovative combination of JFET, MOSFET and Bipolar transistors such as each technology works to hide the shortcomings of the others while extracting only the most desirable linear characteristics of each. Solid-Tube™ outputs are experienced as a very natural and extremely open sound stage where the system disappears to leave only the music. This clinically accurate and transparent sound comes with a touch of warmth otherwise found only in tube electronics.

3.2 - Programming the Odéon-Ag

It is possible to remotely control the *Odéon-Ag* with the use of a third party Infrared Remote such as inexpensive universal remotes found at convenience stores. The *Odéon-Ag* can understand most of the codes from manufacturer's Philips, Sony and Marantz. The universal remote must first be programmed with such a code that does not interfere with existing components and then program the *Odéon-Ag*. Refer to the remote user's guide for help in programming it.

• After selecting a code on the remote that does not interfere with the existing components, connect the *Odéon-Ag* power cord to the AC outlet while holding down the power switch on the unit. All 3 Input LEDs start blinking to indicate that it the *Odéon-Ag* is waiting for IR codes.

• You should now depress keys on the remote control that are commonly used for the Volume Up/Down, Channel Up/Down, Mute and Power. All *Odéon-Ag* red LEDs flash briefly when it understands an IR code. Some alternate IR keys can be used when Channel Up/Down or Volume Up/Down are not available. Here is a list of equivalences: Previous Track and Next Track (CD codes) can be used to change inputs as well as Program next and Program previous (TV code). Eject is also accepted for Power (some CDs do not have power). VCR Fast Forward and Rewind can be used instead of Volume up/Down (VCRs do not have volume control). If a code is not understood by the *Odéon-Ag*, you should select a different program on the universal remote control. Try all Aux, TV, CD or VCR in Marantz, Philips or Sony.

To exit IR code programming, simply depress the power switch on the *Odéon-Ag* face plate. The *Odéon-Ag* will remember the codes received while in programming mode and will recognize them as tele-commands.

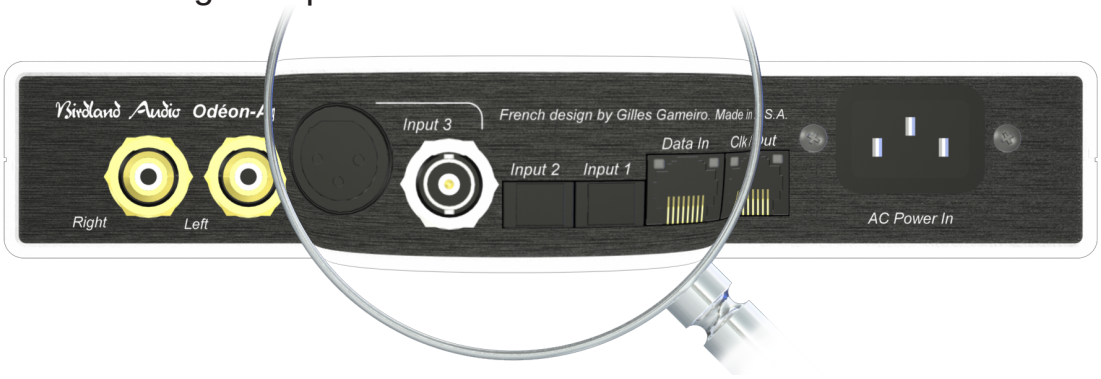
Mute is a function that can only be activated from the remote control. When in mute, the led of the active input blinks slowly to indicate that the input is muted. Selecting that input again from the front panel or depressing the mute remote control key again will unmute the input.

3.3 - Extension Add-On Cards

The *Odéon-Ag* was designed to accept extensions add-on boards in the future such as hyper stable jitter-free 20ppm reclocker or SACD module. This is designed to protect your investment by offering a product that is upgradable. You should however refer installation of such modules to certified technicians. Failing to do so will void the warranty and could expose you to high voltages causing body injury or death.

4 - Connecting the Odéon-Ag

4.1 - The Digital Inputs



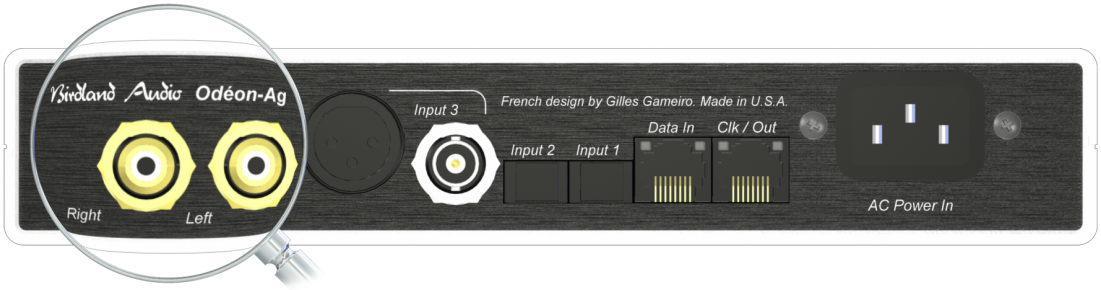
There are three digital inputs on the back of the unit. These can be used to connect digital sources such as CD and DVD players/transports or any other digital sources. The *Odéon-Ag* DAC will receive and decode digital audio data according to the AES/EBU IEC-958 (S/PDIF) standard or, the EIAJCP340/1201 professional and consumer formats including the new updated draft for 192KHz. The digital inputs are activated using the front panel selector switches (see controls on page 5).

You can use the *Odéon-Ag* DAC to convert all digital audio formats which adhere to the standards listed above. You can also use the *Odéon-Ag* to play DVD movies in a downmix 2 channel mode. When doing so, connect the PCM or AC3/PCM output of the DVD player directly to one of the *Odéon*'s inputs and make sure to switch the DVD player output format to PCM, not AC/3. DTS and AC/3 raw audio will not play as is through the *Odéon-Ag* but will cause very high audio noises. Make sure to lower the volume to the minimum before connecting an unknown digital source.

The *Odéon-Ag* input #3 should only have one of the two inputs connected. If both the BNC and the XLR AES/EBU connectors are connected, the *Odéon-Ag* will favor the BNC input first. If that input has no modulation then the *Odéon-Ag* will switch to the XLR input. It will switch back and forth until it finds one of the two inputs with digital modulation present.

There was a time when optical receivers did not perform very well but recent technologies offer excellent constant time delay optical transmitters and receivers. Today, toslink is a very reliable way to interconnect digital gear while insuring separation of the units' grounds, and offers signal immunity to EMI/RFI.

4.2 - The Analog Output



There is one set of analog outputs in the back of the *Odéon-Ag*. This output is variable which means that its level is controlled by the volume control on the front of the Unit. This permits a direct connection of the *Odéon-Ag* DAC to amplifier blocks.

You can use the analog outputs as a direct connection to amplifier blocks (without a preamplifier) and use the volume control on the *Odéon-Ag*. If using with a preamplifier, then you would use the volume control on the preamplifier and leave the *Odéon-Ag*'s volume control set to the 3 O'Clock position.

If you plan to use the *Odéon-Ag* in a system with a preamplifier, and if you use that system mainly as a 2 channel audio system, we recommend that you try bypassing the preamplifier and connect the *Odéon-Ag* directly to your amplifiers. Best results are usually obtained by reducing the number of active components in the analog chain of a system.

The volume control is not a digital multiplication and does not degrade the quality nor the resolution of the digital signal. It is performed in the analog domain by a high quality motorized potentiometer that yields a maximum output impedance of 5 kΩ. This design offers an advantage in that it eliminates an extra active stage after the volume control and provides the most transparent sound possible with no added distortion. This also means that you should not use long and unshielded interconnect cables as they tend to gather noise. As a general rule, long unshielded interconnection cables are not recommended. If you have no choice, then try to chose a shielded interconnect cable. The volume level is also servo assisted by an internal computer which permits the *Odéon-Ag* to become part of a multichannel high-end audio system.

5 - Technical Specifications

DAC characteristics

Frequency Response	0Hz (D.C.) to 38kHz $^{+0}_{-1}$ dB [1]
Dynamic Range	better that 118dB [2]
Signal/Noise Ratio	better that 118 dB

Output characteristics

Channel Separation	112dB
Output Impedance	less that 5kΩ
Output Level 3 O'clock	1.5V RMS
Max Output Level	2.7V RMS (7.68 Volts peak-to-peak)

Mechanical

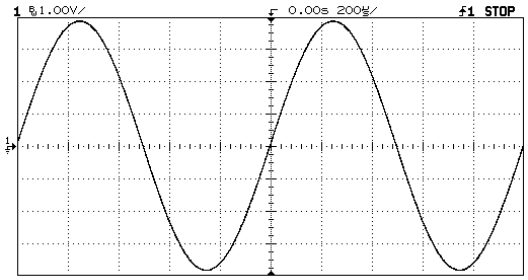
Front & Back Panels	6063 Grained and Anodized Aluminum
Weight	1.35 Kg (3 lbs)
Dimensions	41 x 226 x 178mm (1.6" x 8.9" x 6.9")

Electrical

A/C Input Supply	115 Volts AC (unless otherwise specified)

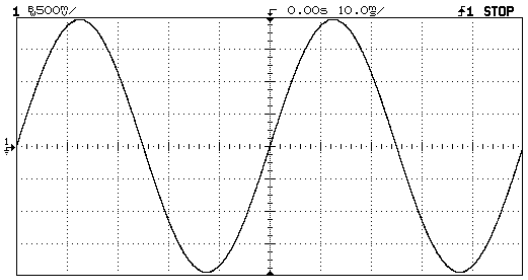
[1] Measured at 96kHz sampling rate.
[2] With 24 bit wide digital input.
In order to maintain product quality, Birdland Audio reserves the right to modify any specification without prior notice.

1 KHz sinewave at 0dB



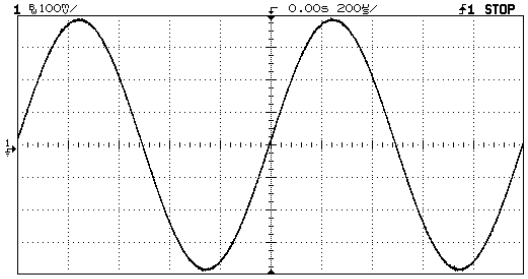
Time - 200µs/div Sensitivity - 1V/div

20 Hz sinewave at -6dB



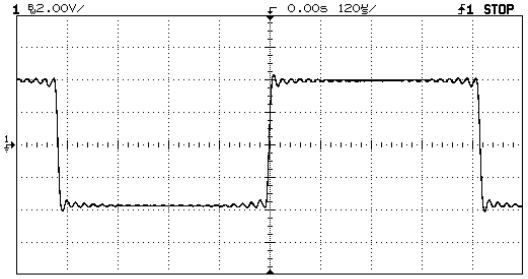
Time - 10ms/div Sensitivity -500mV/div

1 KHz sinewave at -20dB



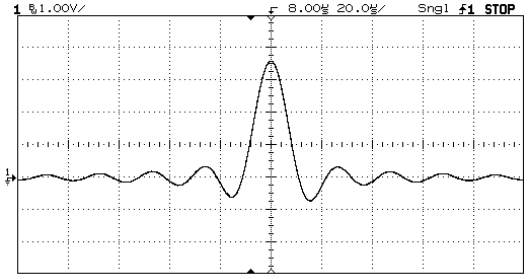
Time - 200µs/div Sensitivity -100mV/div

1 KHz squarewave at 0dB



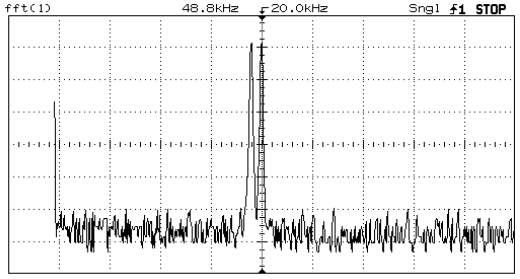
Time - 120us/div Sensitivity - 2V/div

Single impulse full scale



A Single pulse is filtered to produce the full scale output.

19kHz and 20kHz at 0dB



This plot shows no attenuation of the 20kHz signal.

Note: all measurements performend with volume at maximum to show the maximum levels of analog outputs

Birdland Audio

The way music should sound

Birdland Audio
P.O. Box 51863
Pacific Grove, CA 93950

http://www.birdland.com