



Athena DAC with ESP Supply Owner's Manual

Please read carefully before
installing and operating this equipment



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Made in the USA
Using US and Imported Parts

Dear Music Lover,

I wanted to personally thank you for your purchase of my Athena DAC with ESP Supply.

I have loved music all my life—as a musician, record producer, and audio engineer, which has made me unapologetically fussy about sound. That’s a good thing.

Each Athena DAC is meticulously crafted by hand with precision and pride to deliver the most enjoyable listening experience for you.

I am proud to put my name on it and honored to welcome Athena into your system.

Wishing you many happy years of happy listening!

Sincerely,

-- George Counnas, President of Zesto Audio

FYI:

Zesto is Greek for hot

Athena is the Goddess of Wisdom, and she’s so cool that she’s featured on the official state seal of California.

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What's in the box?

- Athena DAC with ESP supply
- 2 Gold Pin 12AU7/ JJ ECC82 Vacuum Tubes
- 2 Gold Pin 12DW7/ JJ ECC832 Vacuum Tubes
- White glove for handling tubes
- IEC power cable 6'

- Not included: Interconnect cables
- Not included: Technical support for your Source or Audio software

Warning and Caution

WARNING: The triangle with the lightning flash symbol displayed on the unit advises the user of dangerous, uninsulated voltage inside the product's enclosure.

CAUTION: To reduce the risk of electric shock, do not remove the cover. There are no user-serviceable parts inside; it is recommended that only qualified personnel service this component.

1. **OWNER'S MANUAL:** Before powering up the equipment, read all safety and operating instructions and follow them as instructed. Retain the safety and operating instructions for future reference.
2. **ATTACHMENTS:** Use only those attachments recommended by the unit manufacturer, as others may cause hazards.
3. **ACCESSORIES:** Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing injury to a person or damage to the unit. Mount the unit according to the manufacturer's instructions with the suggested mounting accessory.
4. **WALL OR CEILING MOUNTING:** Do not mount the unit on a wall or ceiling.
5. **WATER AND MOISTURE:** Do not use the unit near water (for example, near a swimming pool, bathtub, wash bowl, kitchen sink, or laundry tub) or in a damp environment (like a basement or outside in the rain).
6. **OBJECT AND LIQUID ENTRY:** Do not push objects of any kind into the unit through openings, as they could touch dangerous voltage points and short out parts, possibly resulting in a fire or electric shock. Do not spill liquid of any kind on the unit. If water or any metal object (such as a paper clip, coin, or staple) accidentally falls inside the unit, disconnect it from the AC power source immediately and contact Zesto Audio for further instructions.
7. **HEAT:** Position the unit away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.
8. **VENTILATION:** Slots and openings in the enclosure create ventilation to protect the component from overheating. All these openings must remain unobstructed. Allow at least six inches of clearance above the unit, 0.5 inch below, and an opening behind the unit for airflow. Do not place the unit on a bed, sofa, rug, built-in bookcase, or rack without adequate ventilation.
9. **GROUNDING OR POLARIZATION:** As a safety feature, the unit may be equipped with a polarized alternating current line plug in which one blade is wider than the other and has an additional grounding blade. This plug will fit into the power outlet only one way. If you cannot insert the plug fully into the outlet, try reversing the plug. If the plug still will not fit, contact a licensed electrician to update your outlet. Do not defeat the safety purpose of the polarized plug.
10. **POWER SOURCES:** Operate the unit only from the power source indicated on the marking label on the back of the unit. If you are unsure of the type of power supplied to your home, consult your unit dealer or local power company.
11. **POWER CORD PROTECTION:** Arrange power supply cords so that they do not suffer from foot traffic or pinching by items placed on or against them. Pay close attention to cords where plugs enter the AC outlet and where they exit from the unit.
12. **LIGHTNING:** For added protection during a lightning storm or when the component is idle for long periods of time, unplug the unit from the wall outlet. This will help protect the unit from lightning and power line surge damage.
13. **POWER LINES:** Do not locate an outside antenna system in the vicinity of overhead

power lines or other electric lights or power circuits. When installing an outside antenna system, take extreme care to avoid touching the power lines or circuits; contact with them could be fatal.

14. **OVERLOADING:** Do not overload wall outlets, extension cords, or integral convenience receptacles, as this increases the risk of fire or electric shock.

15. **REPLACEMENT PARTS:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or those having the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock, or other hazards.

16. **SAFETY CHECK:** Upon completion of any service to the unit, ask the technician to perform safety checks to ensure the unit is in proper operating condition.

17. IMPORTANT SAFETY NOTE:

Before connecting a new product such as the Andros Téssera Phonostage to your audio or home theater system, turn off all other equipment (preferably unplugging them from the AC power source). Many audio components feature automatic turn-on circuits that may activate during installation, potentially causing damage to electronic components or speakers. This type of damage is not covered by product warranties, and Zesto Audio specifically disclaims responsibility for any such damage.

- **Power Cord:** The removable IEC power cord provided with your unit was specifically designed for use with this product, but other AC cords may be used. Consult your dealer for advice on AC power cords and high-quality wire in your system.

- **AC Fuse:** The fuse is located inside the compartment in the IEC power entry connector. If the unit does not power up, contact an authorized service representative. **Important:** Any use of aftermarket performance fuses will VOID the warranty.

Wiring: Cables running inside walls should have the appropriate markings to indicate compliance and listing by the UL, CSA, or other standards required by the UL, CSA, NEC, or your local building code. Questions about cables inside of walls should be directed to a qualified custom installer, licensed electrician, or low-voltage contractor.

18. **RECORDING COPYRIGHT:** Recording copyrighted material for other than personal use is illegal without permission of the copyright holder.

19. FCC INFORMATION FOR USER:

- **CAUTION:** Any changes or modifications not expressly approved by Zesto Audio could void the user's authority to operate the equipment.

- These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy, and if not installed and used in accordance with the instructions it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following:

- Reorient or relocate the equipment.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from where the receiver is connected.

Specifications

Inputs

- One USB
- Two Optical (S/PDIF)
- Two RCA Coax (S/PDIF)
- One AES/EBU
- One I²S (see page 8 for diagram)

Outputs

- Class A, Dual Mono vacuum tube output stage
- No filters on the tube output stage
- One set of true XLR transformer Balanced outputs (pin 2 hot) with an impedance of 300 Ohms
- One set of Single-Ended RCA outputs with an impedance of 300 Ohms
- Maximum peak output level of 3 Volts RMS
- 2 Independent ground lift switches on the left and right outputs
- Recessed RCA and XLR output connectors are gold-plated with an isolated ground.
- No negative feedback

Digital Performance

- State-of-the-art, most musical ROHM DAC chip
- 4-layer copper Printed Circuit Board
- PCM up to 32-bit / 384 kHz
- DSD64 (X1), 128 (X2), 256 (X4), 512 (X8)
- Native no up sampling

Vacuum Tubes

- Two (2) Gold pin JJ ECC82/12AU7
- Two (2) Gold pin JJ ECC832/12DW7
- High-quality gold pin ceramic sockets

Detailed Specifications

- Non-inverting output polarity
- Cross-talk < 90dB

Power

- Power consumption 30W, 0 drain when off
- Voltage 100 to 120V AC 60Hz
- Optional factory installed 220 to 240V AC 50/60Hz
- Standard 3-pin 15 Amp IEC power connector
- ON/OFF power switch conveniently located on the side panel
- Internal ESP Supply Toroidal transformers, 1 300V and 1 12V
- +/- 15V switching power supply
- 12 internal DAC power supply/regulators

Other Features

- DAC will be upgradable for future technology
- Each unit is hand-made in the USA
- 50-hour factory burn-in on all circuits and vacuum tubes
- Dimensions 17" w X 12" d X 5"h
- Product weight 20.5 lbs. (9.3 kg)
- Shipping weight 28 lbs. (12.70 kg)
- Shipping box: 21" w x 21" d x 11"h (53.34cm x 53.34cm x 27.94cm)
- 16-gauge zinc-plated steel enclosure
- Two-year limited warranty
- Six months warranty on Vacuum Tubes

Rear Panel Inputs and Controls



Power ON/OFF switch: located on the side panel, front left.

<p>Inputs (left to right)</p> <ul style="list-style-type: none">• One I²S• One AES/EBU• Two Optical (S/PDIF)• Two RCA Coax (S/PDIF)• One USB	<p>I²S Diagram</p> <p>The diagram shows a 16-pin connector with the following connections: Pin 7: LRCK- Pin 9: LRCK+ Pin 15: SCL Pin 16: SDA Pin 12: MCLK- Pin 10: MCLK+ Pin 3: DATA+O Pin 1: DATA-O Pin 4: BCK+ Pin 6: BCK-</p>
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USB Warning: Do **not** connect USB memory sticks or hard drives to the USB input. This will damage the DAC and void the warranty.

Outputs:

- 2 Ground lift switches
- One set of gold-plated RCA Single Ended outputs
- One set of gold-plated balanced XLR with dedicated output transformers.
- IEC Power entry connector: 110 to 120V AC power input.
- optional factory-installed 220 to 240V mains
- Fuse Holder drawer in IEC mains: 100V to 120V 0.5 Amp slow blow fuse,
- 220V to 240V 0.25 Amp slow blow

Input Selector Knob

Rotate to select among the seven digital inputs. Green LEDs indicate the active input.

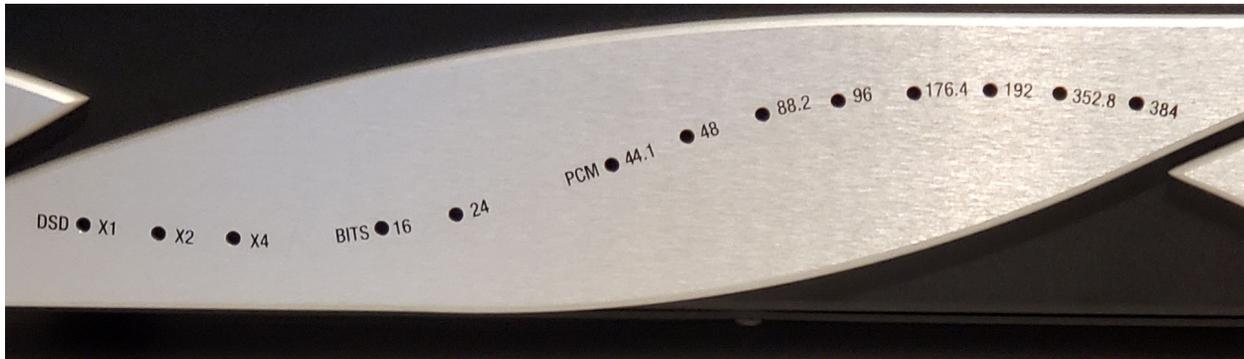


Note: There is a hidden Knob feature that changes the Slope to slow or fast for the digital filter roll off.

- You push the knob in, and the Input, bit rate, and file LEDs will flash 3 times fast for fast or 3 times slow for slow slope. Start with slow.
- **Default Slope rate:** will be the last one used. You can have different Slope rates for every Input.

Front Display

The display automatically indicates: Input source, Sample rate, Bit depth, or DSD format.

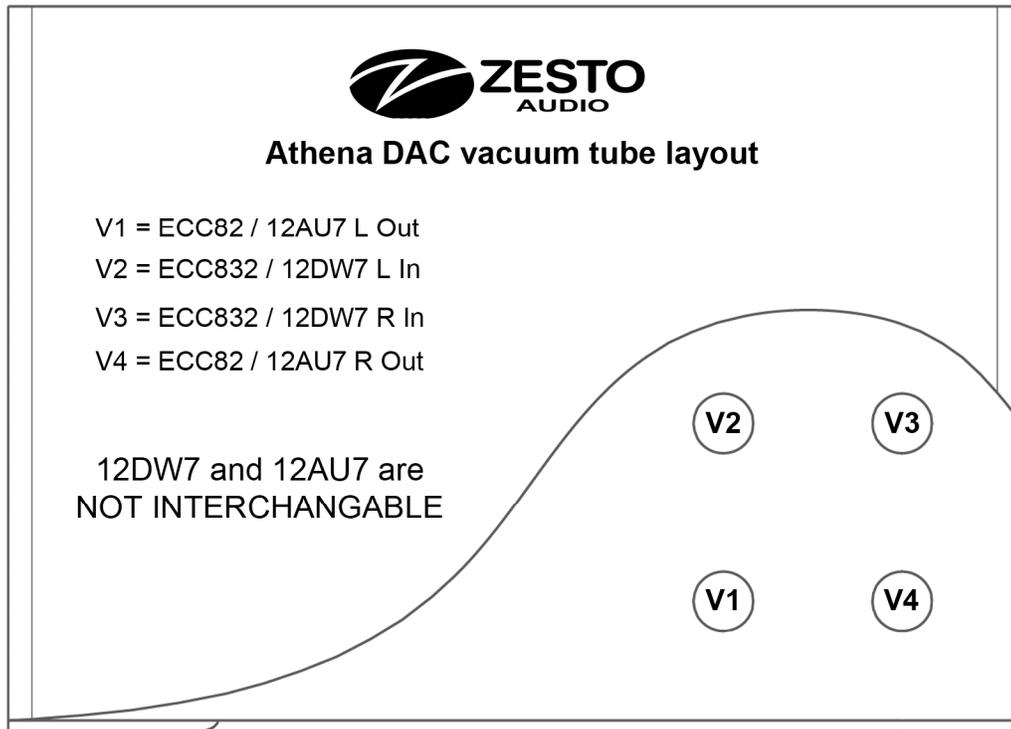


Wide Range of Formats up to 32-bit/384kHz and up to X8 DSD Native with no up-sampling

- **4 DSD Sample Rates:** X1 (64), X2 (128), X4 (256), and *X8 (512)
- ***X8** both the X2 and X4 DSD LEDs will illuminate
- **3 Bit Rates:** 16, 24, and *32
- ***32-bit rate** will illuminate the 24-bit LED
- **8 PCM Sample Rates:** 44.1, 48, 88.2, 96, 176.4, 192, 352.8, and 384

When you turn on the Athena:

- There will be a diagnostic start-up where all 20 LEDs sequentially light up and land on the selected file.
- **Default setting:** The DAC will illuminate the last selected input.
- **Default setting** without a signal is 16/48.
- The DAC will automatically switch to the correct format of the incoming file.
- When your music is playing, LEDs will illuminate to indicate the sample rate, the bit rate, and the Input.
- If your music file is beyond the parameters of the DAC, it will not recognize the file.



Install the Vacuum Tubes with unit OFF

- **Important!** First identify the two types of tubes as they are **NOT INTERCHANGABLE**. Your input tubes are ECC832 (12DW7) and your output tubes are ECC82 (12AU7).
- **Warning!** Please note that failure to follow this warning can cause considerable damage not covered under warranty. Plus, it will sound terrible and wear out the tubes prematurely.
- The sockets are labeled to correctly plug in the right tube in the right socket. Using the glove provided, unpack and carefully plug in, **do not** rock the tubes that can bend the pins. Make sure they are firmly pushed in all the way in their sockets. They can only go in one way.

Hookup, Settings and Adjustments

Software: We do not offer technical support for your streamer or audio software.

Set Up

- When using a USB output, your source will ask you to choose your output device. Select the *Headphone USB 2.0 high-speed true HD audio driver*.

Location:

- All tube gear requires good ventilation.
- Don't place your DAC next to your Phonostage. This could create noise for your phonostage.

Cables: Everything Matters

- It's recommended to use the shortest cable possible.
- Your USB cables need to have a USB-3 rating.
- The Athena DAC responds well to a high-quality power cable.
- **Warning!** Do not plug in a USB thumb drive memory stick or hard drive into the USB input. Due to the different circuitry, this could damage the DAC. Any damage caused by not heeding this warning will void the warranty.

Computer Source:

- We recommend you have a dedicated computer that is a current model with a current operating system that can accommodate the latest updates.

Warm up with a signal is important

- Unlike most tube gear, where you only need to turn it on for a 15-minute warm-up, for the best performance, this DAC needs a signal to warm up the DAC chip and all associated components so they can talk to each other. We recommend you mute your Preamp and play 3 to 5 songs muted for the best warm up.
- If you are unable to run a signal through it during warm-up, you may notice an improved difference between the first and third song. So please be patient and don't do active listening or play your favorite song first or second without the benefit of a proper warm up.

Always pause between changing formats to avoid pops or clicks.

Helpful Tips for Tube Gear

A good rule to remember with tube gear is to **turn on** your Source 1st (streamer or computer), DAC 2nd, Preamp 3rd and Power amps last.

When you **turn off** your tube gear always remember to **Mute** your Preamp first. Then turn off your Power amps 1st, Preamp 2nd, DAC 3rd and source 4th. This order protects your speakers and avoids loud clicks and pops.

Caution: Tube electronics should not be turned ON, then OFF, then ON again quickly. This could blow a fuse. Once the unit is ON, it is safe to wait a minute before switching OFF.

Tube Life: Signal tubes should last about 2000 hours. We recommend you change tubes every 2 years.

How do I know when a tube is bad?

- If it turns white, it's dead.
- Usually, a tube will slowly fade away.
- Your center image has shifted left or right.

Leaving the equipment on: It is **not** recommended to leave tube equipment on all the time, as it will unnecessarily wear out the tubes. It will only take 15 minutes to warm up.

Burn-in: Like all high-end audio equipment, this Vacuum Tube DAC can take **200 hours to break in**. For circuit testing and quality assurance, Zesto Audio ships all the Athena DACs with at least **50 hours of factory burn-in**. Final testing is performed after burn-in to allow circuits to settle.

Tube Rolling (The Sport of Audiophile Kings)

- The 12DW7 input tubes closest to the back/curve are the most sensitive and effective to tube roll.
- Only a 12DW7/ECC832s type will work.
- We cannot recommend any specific NOS tubes, as no 2 are the same. We prefer to encourage personal taste, trusting your ears, and enjoying the sport.
- **Warning: Any damage caused by tube rolling will not be covered under the warranty.**

Fuse

- This DAC is designed specifically for a 5mm x 20mm 0.5A Slow Blow fuse. **Do not use a standard fuse.** 240V uses a 0.25A Slow Blow.
- The fuse is located in a compartment drawer inside the IEC mains entry.
- **Important!** Any use of aftermarket performance fuses in the IEC mains will **VOID** the warranty.

Ground

Important! It is necessary to have your DAC plugged into a properly grounded three-pin electrical outlet. Grounding is a safety issue as well as a potential source of noise problems.

- Ground switches apply to outputs only.
- The ground switches work independently. You can adjust them for the least amount of noise.

Trouble Shooting

- **If the Unit is not responsive and freezes:** Switch to another input and come back, it will automatically recognize the new file.
- **If the LEDs don't illuminate,** check your power cable.
- If your music file is beyond the parameters of the DAC, it will not respond.
- If you experience **Clicks or Pops** when changing formats, you should always hit Pause before changing formats.
- **One Channel is louder:** If the volume is louder on one channel than the other, you may want to try switching the back tubes around with the unit **Turned Off**.

Warranty

All Zesto Audio equipment is covered by a 2-year limited warranty for parts and labor to cover defects in materials and workmanship and 6-month warranty on the original vacuum tubes from date of purchase.

To obtain this original owner warranty the completed warranty registration card should be emailed to the factory within 15 days from date of purchase. The warranty is not transferable.

This warranty is void if the product has not been used in accordance with the instructions found in this owner's manual, or if it has been misused, abused, damaged by accident or neglect, or in transport once in possession of purchaser. The warranty is also void if the product has been tampered with or has been repaired or modified by anyone other than Zesto Audio or its specifically authorized representatives. This limited warranty only applies to Zesto Audio equipment and carries no responsibility for any other equipment attached to this unit.

Warranty Voided

1. Any damage caused by plugging in a USB thumb drive memory stick or hard drive into the USB connection will VOID the warranty.
2. Any damage caused by "tube rolling".
3. Any damage caused by incorrectly inserting the tubes in the wrong positions.
4. Any use of aftermarket performance fuses in the IEC mains will VOID the warranty.

To return the product it must be packed in its original packaging and returned to Zesto Audio or its authorized representative via insured freight at the owner's expense. Returned products must be accompanied by written description of the defect and a return authorization number that is available from Zesto Audio or the authorized representative. Upon receipt of the defective product Zesto Audio or the authorized representative agrees to repair the product without charge for parts and labor if within the 2-year warranty period, except for vacuum tubes if the unit is more than 6 months old. The product will then be returned via prepaid insured freight with a carrier at the sole determination of Zesto Audio or the authorized representative.

Zesto Audio and its partners reserve the right to modify their products or change specifications at any time without obligation or liability to previous purchasers.

Warranty will cover ownership outside the USA, but shipping is the sole responsibility of the owner. See your local dealer for factory approved service in your area.

Factory service on non-warranty items will be billed at an hourly rate to be quoted before work is done.

Friendly reminders for returning your Zesto gear.

- Units must ship in original factory packaging.
 - Please bear in mind that FedEx/UPS will drop this DAC at least 10 times in transit.
 - Please note that Zesto Audio will not be responsible for damage to the tubes or the unit's finish caused by inadequate packaging.
1. Please place the labels “remove before use” under the curve to protect the mid-panel paint. A business card will also work.
 2. Wrap the product in the plastic sheet to protect the paint and then fit on the custom foam end caps. Do not lift a DAC into a box. Instead, turn the unit upside down, place the box over the unit, then turn it right side up.
 3. Do not place any items on the rear panel during shipping as it could damage switches.
 4. Tubes can be very sensitive travelers, so pack tubes tightly within their box.
 5. Wrap the tube box in bubble wrap and wedge in front of the product so it cannot move around within the larger shipping box.
 6. Please include Carolyn@zestoaudio.com in the tracking. No need to require a signature. Please insure your shipment.