Andros Téssera Reference

Vacuum Tube Phonostage Preamplifier

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 Andros Téssera Reference Phonostage.

I have loved music all my life – as a musician, record producer and audio engineer. That makes me fussy about sound. That's a good thing.

Each unit is built by hand with precision and pride to produce the most enjoyable listening experience for you.

I am proud to put my name on it and honored to share this with you.

Wishing you many happy years of listening!

Sincerely,

-- George Counnas, President of Zesto Audio

FYI:

Zesto is Greek for hot

Andros is a Greek island and the home of my grandmother's family.

Téssera is the number 4 in Greek because this Phonostage can accommodate 4 tonearms

Table of Contents

What's in the box?

Andros Téssera Reference Phonostage

ESP Supply

3 Meter umbilical cord

6 Vacuum Tubes, (2)12AX7/ECC83s, (2) 12DW7/ECC832 and (2) 12AU7/ECC82

White glove for handling tubes

IEC power cable 6'

Optional: One ground wire for turntable

Not Included: Interconnect cables

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 of 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 light 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 or repairs to the unit, ask the service 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 Reference 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 an 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 drawer of the IEC power entry connector.
      IMPORTANT: Only Slow Blow fuses can be used in this equipment. If the unit does not power up, contact an authorized service representative.
    - **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 of 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 measures:
        - 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.

Rear Panel Inputs and Controls

Channel A and Channel B are identical (Reading Left to right)

2 Ground ON/OFF switch ……. Connects the Grd. to the MC input.

XLR3 Transformer Balanced MC Input (Left and Right) ……A possible turntable input.

Left channel = top row, Right channel = bottom row

Moving Coil RCA MC Input (Left and Right) ……A possible turntable input.

Left channel =white RCA, Right channel =Red RCA

RCA Moving Magnet (MM) Input (Left and Right) ……. A possible turntable input.

Ground binding post/banana socket ……. The main ground point for turntable.

RCA Output (Left and Right) ……The main output going to your system.

XLR3 Transformer Balanced Output (Left and Right) …….. To any line level input on your Preamp.

Power Umbilical…… To Power Supply, connect umbilical cable.

Front Panel Controls

Channel A (reading Left to Right**)**

Power ON/OFF switch……	Push to turn the unit ON/OFF.
MC/MM Selector Switch……	MC or 2 position MM Load
LED Light……	Indicates Channel A is On
Gain Switch……	3 Position for MC & MM
MC Load……	12 Position MC Load
Channel Selector……	Either A or B

Channel B (reading Left to Right**)**

MC/MM Selector Switch……	MC or 2 position MM Load
LED Light……	Indicates Channel B is On
Gain Switch……	3 Position for MC & MM
MC Load……	12 Position MC Load

Power Supply, Dual Chassis

ESP Supply (Energy Source Power Supply)

Front (not in photo)

Front Power Supply LED Light…… Yellow = Standby; Red = main unit is On

Front Rocker Power Switch……...Turns the Power Supply to Standby

(Power switch on front of main unit for On)

Rear (reading left to right)

IEC Power Entry Connector…….……110V - 120V AC power input

(Optional factory installed 220V -240V, 50/60Hz mains)

Mains fuse……Located in drawer of Mains IEC connector

Mains Fuse 110V–120V ……5mm x 20mm-1A slow blow

Mains Fuse 220V–240V……5mm x 20mm-0.25A slow blow

Fuse 1…… 6mm by 32mm, 4Amp Slow Blow Fuse

Fuse 2…… 6mm by 32mm, 0.75Amp Slow Blow Fuse

Fuse 3…… 6mm by 32mm, 0.25 Amp Slow Blow Fuse

To Phonostage…… Connect 3-meter umbilical cable to main unit

Specifications

Inputs per channel

- Two completely independent dual mono channels, A and B with LED indicator
- Accommodates 4 tonearms, 2 per channel
- Separate MM and MC inputs per channel
- Each channel has independent controls, and all selections are saved when you switch between channels
- Selection switch for MC and 2 position MM 47K and MM 68K
- MM impedance switch 47K or 68K Ohms
- MM capacitance 220pf
- MC transformer Balanced gold plated XLR input
- MM and MC Single Ended RCA input, gold plated with isolated ground
- 4 MC ground on/off switch
- 12 position MC load impedance:1000, 800, 700, 500, 400, 350, 300, 250, 200, 150, 100, 50 Ohms
- 4 Superior quality MC Internal step up transformers
- 3 position MC gain switch for High, Medium & Low output cartridges
- Two ground binding posts

Outputs per channel

- High quality output transformers driven by dedicated 12AU7/ECC82 output tubes
- True floating ground, transformer Balanced XLR gold plated outputs
- Single Ended gold plated RCA output, with isolated ground
- Impedance 600 Ohms
- +12V max output level

Active Components

- Two (2) Gold pin JJ ECC83S/12AX7 vacuum tubes with high quality gold pin ceramic sockets
- Two (2) JJ ECC832/12DW7 vacuum tubes with high quality gold pin ceramic sockets
- Two (2) Gold pin JJ ECC82/12AU7 vacuum tubes with high quality gold pin ceramic sockets

Power

- Dual chassis
- Power supply with 3-meter DC umbilical cable incorporating special RFI suppression
- Locking bayonet connector rated for higher voltage and higher current

- New ESP Supply with 3 Toroid. 1 high voltage 300V and 1 low voltage 12V low power and 1 low voltage 12V high power, housed in the external unit.
- Power supply dual color LED, yellow for standby and red for ON
- Main unit push ON/OFF front power switch illuminates a red LED on Channel A or B
- Power supply standby switch on the front
- Power supply standby power rating 0.5 Watts
- Power consumption 60 Watts
- Standard 3 pin 15A IEC power connector on power supply
- Voltage 110V – 120V AC 50/60Hz
- Optional factory installed 220V – 240V AC 50/60Hz

Detailed Specifications

- 3 position Gain switch
- MC input 65dB, 70dB and 75dB or MM input 47dB, 51dB and 55dB
- Noise 95 dBV below max output level
- Dynamic range 116 dBV
- Frequency response complies with the original RIAA curve within +or- 0.5 dB
- RIAA curve is achieved using a passive filter
- 1% metal film resisters throughout
- Polypropylene capacitors throughout the audio path
- All analog tube circuitry with no solid state devices in the signal path

Other Features

- Controls on the front
- “Made in the USA” using US and imported parts
- Each unit is built by hand
- 50 hour factory burn in on all circuits and vacuum tubes
- Dimensions main chassis 17″ W X 15″ D X 5.5″ H, Power Supply 17” W x 8” D x 5”H
- Weight: Main unit 27 lbs. (12.25 Kg), Power supply 18 lbs. (8.16 Kg)
- Shipping weight 55 lbs. (24.9 Kg), box 20″ X 20″ X 16″
- 16 gauge zinc plated steel enclosure
- Two year limited warranty
- Six months warranty on Vacuum Tubes

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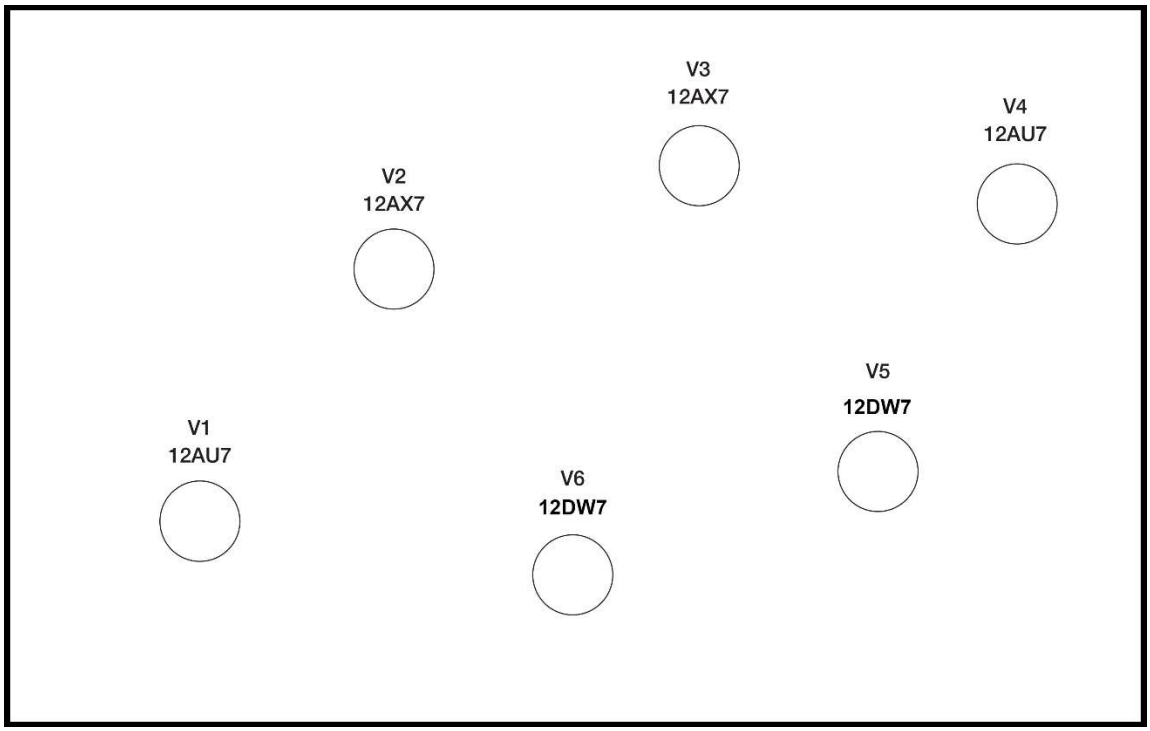
Tube Layout



Left Channel

V1 - 12AU7/ECC82 = Output Tube

V2 - 12AX7/ECC83s = Input Tube

V6 – 12DW7/ECC832 = Driver Tube

Right Channel

V3 – 12AX7/ECC83s = Input Tube

V4 - 12AU7/ECC82 = Output Tube

V5 – 12DW7/ECC832 = Driver Tube

Important: Tubes are not interchangeable

Before you start you will need:

- Interconnect cables to your system RCA or XLR
- Turntable cables, RCA or XLR
- Manufacturer specs on your Phono cartridge
- Is your cartridge MM or MC?
- Is your MC cartridge high or low output?
- What is the recommended Ohms load for MC cartridge?

Proper Care of your Vacuum Tube Phonostage

Very Important Read First

The simple rule to remember is “Turn on first, Turn off last”.

It is customary for vacuum tube equipment, as it is first turned on, while the unit is powering up, to have a brief initial “hum” coming from the unit, not from the speakers.

It is very important that all of your audio equipment is **turned off** or unplugged from the main power before attempting to install this unit.

It is recommended that during normal operation this unit is **turned on first** before turning on the rest of your system to prevent damage to your equipment and to get the best performance from the phonostage.

You should also **turn off** your power amplifiers before making any connections to the phonostage.

In addition, it is also strongly recommended that this unit is **turned off last** after the rest of your system has been turned off to prevent damage to your equipment. **Remember “Turn on first, Turn off last”.**

Not doing so may create a very loud noise that could damage your speakers or other equipment.

Hookup, Settings and Adjustments

Burn-in

Like all high end audio equipment, this Vacuum Tube Phonostage can take 200 hours to **break in**. For circuit testing and quality assurance, Zesto Audio ships all their Phonostage units with at least 50 hours of burn-in.

Vacuum Tubes

Important Warning! First identify the 3 types of tubes as they are **NOT INTERCHANGEBLE.** Your input tubes are ECC83s (12AX7), driver tubes are (12DW7/ECC832) and your output tubes are ECC82 (12AU7). Please note that failure to follow this warning can cause considerable damage not covered under warranty.

The sockets are clearly labeled. Using the glove provided carefully plug in the six vacuum tubes making sure they are firmly pushed in all the way in their sockets. They can only go in one way.

Output

Using interconnect cables, connect both the left and right color coded RCA or XLR outputs to an auxiliary or equivalent input on your system. Never hook it up to the “Phono” input on your preamp because you would be adding two RIAA curves.

Optional Ground Wire

Many phono cables already have a ground wire, so this is optional. If needed, attach the Spade Lug to both the Turntable and Phonostage binding post ground. One ground wire is provided.

Input

Before connecting your turntable to the phonostage, please determine if your cartridge is MM or MC high output or an MC Low output. Also, what is the recommended loading for your cartridge? This information is usually in the cartridge documentation or can be found on the manufacturer’s web site.

The turntable signal cables attach to the left and right inputs of the phonostage. Choose the MM-RCA, MC-RCA or MC-XLR.

Cartridge Set up

Select MC or any of the two MM loading positions on the switch.

If using an MC cartridge select the ground ON position on the back to start with.

If using an MC cartridge select Low output on the phonostage to start with.

If using an MM cartridge select either 47K or 68K.

Feet

Your unit is installed with four feet using #8-32 screws.

Power

Using the bayonet connector, connect the umbilical cord from the external power supply to the phonostage. Then carefully plug in the AC power cable to the phonostage external power supply first then to your main power.

Turn it on

Caution: Tube electronics should not be turned ON, then OFF, then ON again quickly. This could blow a fuse or create a hum. Once the unit is ON, it is safe to wait a minute before switching OFF. If you do get a hum, leave the unit off for 15 minutes.

1. Turn on the external power supply first. A yellow LED will go on. This puts the unit into “Standby”

2. Turn on the phonostage using the push button ON/OFF switch located on the front. One of the two green LED lights labeled “Channel A’, or “Channel B” will turn on. Also, the yellow LED on the power supply will turn red. After a short time (about two minutes) the six tubes should start glowing.

If the tubes do not light up, or the LED’s do not go on check your power and umbilical cables. If you continue having problems, please contact your dealer or Zesto Audio for instructions.

Enjoy the music!

Tips and Tricks

Grounding

- **Important!** It is necessary to have your Phonostage power supply plugged into a proper three pin electrical grounded outlet. Grounding is a safety issue as well as a potential source of noise problems.
- Start with both ground switches up. Then try any combination that sounds good. Throw switches independently until you get the lowest noise.
- The ground switches are designed to isolate the grounds between the turntable and the phonostage.
- They affect only the input and not the output of the phonostage.
- Ground switches work independently and are designed to break ground loops. You can have one up, one down or both up and down, any combo can work.
- **Example:** Some tone arms have all their grounds wired together.

Location

To minimize the amplification of external noise, do not place the main unit nearby:

- Wi Fi access point
- Digital equipment like TV satellite boxes
- Any power supplies like the ones used for turntables or dual chassis

Cables

- Recommend shielded phono cable from turntable to input of phonostage.
- Recommend upgrading your power cable.
- Recommend balanced interconnect cable from your phonostage to your line amp.

MC Load Adjustments

- The range is 1K to 50 Ohms in twelve steps. Find the setting that sounds best in your system. Don't go below the cartridge manufacturer's recommended settings, but experiment with any setting above. Load settings can be done "On the Fly" without clicks or pops, while the unit is **Turned On** so you can hear the difference. Trust your ears!
- Keep in mind, the higher the loading number i.e., 1000 is the least amount of load and the lower number is the greater load on the cartridge. The greater the load is the least dynamic range.
- Unlike most Phonostages, the loading on the Andros is different because it loads on the secondary of the step-up transformer. This method transfers the entire signal from the cartridge to the primary side of the transformer without any interference from other components like resistors.
- **Loading Example:** For the Benz Micro Gull Wing SR, they recommend a 400 Ohm load and I set mine at 700 Ohms. You can hear when you've gone too far, usually in the mid-range.
- You may find a need to adjust the loading as your Cartridge breaks in.
- You may also want to revisit the load settings after any adjustments to your turntable/tone arm.

MM Load Adjustments

- Starts with 47K Ohms on the switch then try the 68K Ohms.

The Gain Switch

- The three-position switch on the front sets the gain
- Adjust the gain to Low for a high output cartridge, mid for a mid-output cartridge and High for Low output cartridges.
- MC input gain is 65dB, 70dB and 75dB
- MM input gain is 47dB, 51dB and 55dB

Volume

- If the volume is louder on one channel then the other, you may want to try switching the tubes around with the main unit **Turned Off and Power supply on Standby.** Use the white glove provided and switch tubes, **Note:** there are 3 different tubes installed 12AX7s, 12DW7s and 12AU7s, these are **not interchangeable**.

Tube Rolling (The Sport of Audiophile Kings)

- The unit is designed around the JJ ECC83s because they are neutral, consistent and are high gain/low noise.
- We also use JJ ECC82s.
- If your tastes are warmer, you may want to try Mullard's and if you like it brighter try GE.
- 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.
- Any damage caused by tube rolling will not be covered under the warranty.

Tube Rush Noise

- If you are hearing this noise, it is most likely a gain setting is too high on the input of the Line Amp.

Leaving the equipment on

- Once your Phonostage is burned in properly, it is recommended to not to leave the unit on all the time which could wear out the tubes prematurely.
- These signal Tubes last approximately 1000 to 2000 hours.

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 must be received by email at the factory within 15 days from date of purchase. The warranty is not transferable.

Note: The use of aftermarket performance fuses will void the warranty

Any damage caused by tube rolling is not covered under the manufacturer's warranty

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.

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 or 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.