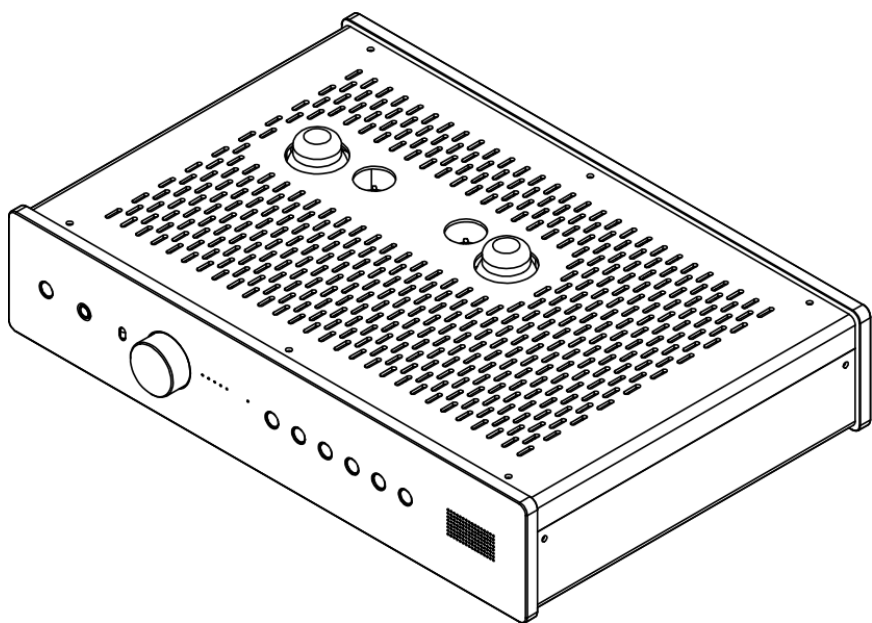


L.T.A.

L I N E A R T U B E A U D I O



M I C R O Z O T L P R E A M P L I F E R

USER GUIDE: microZOTL Preamplifier

Linear Tube Audio
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WARNING: For safety, the cover of this amplifier should be secured at all times.

This amplifier contains extremely high voltages and the user should not attempt to service the amplifier. Furthermore, this amplifier generates radio-frequency energy that can interfere with communications equipment.

Introduction

The microZOTL Preamplifier is a Class A tube preamplifier and headphone amplifier utilizing ZOTL (Zero-hysteresis Output Transformer-Less) technology. After years of refining and testing, LTA has created the microZOTL Preamplifier. This is the highest expression of the microZOTL circuit as both preamp and headphone amp in a rack-friendly form factor.

Limited Two-Year Warranty

1. Your new product is covered by a limited two-year warranty against defects in material and workmanship. Any repairs required will be made at no charge within the first two years after purchase as a new unit. This warranty is transferable to new owners within the original warranty period.

2. Any units returned for warranty repair must be shipped prepaid after receiving return authorization*. If possible, the unit should be shipped in its original packaging. If such is not possible, the unit should be well packed with particular attention paid to protection of all corners and avoidance of any looseness in the carton.

**Handling and shipping costs are the responsibility of customers outside the United States.*

3. This warranty does not apply to damage resulting from physical abuse or unauthorized alterations or repairs, or from tube rolling or adapter use, or from the use of third-party components, or damage to exterior finish after delivery.

4. The warranty is void if the serial number has been removed, altered, or defaced.

5. This warranty is void if improper voltage is applied to any input or output.

6. If Linear Tube Audio determines after receiving the unit that damage was misrepresented and has been caused by something not covered by the warranty, the customer must pay for any necessary repairs before the unit is returned to the customer.

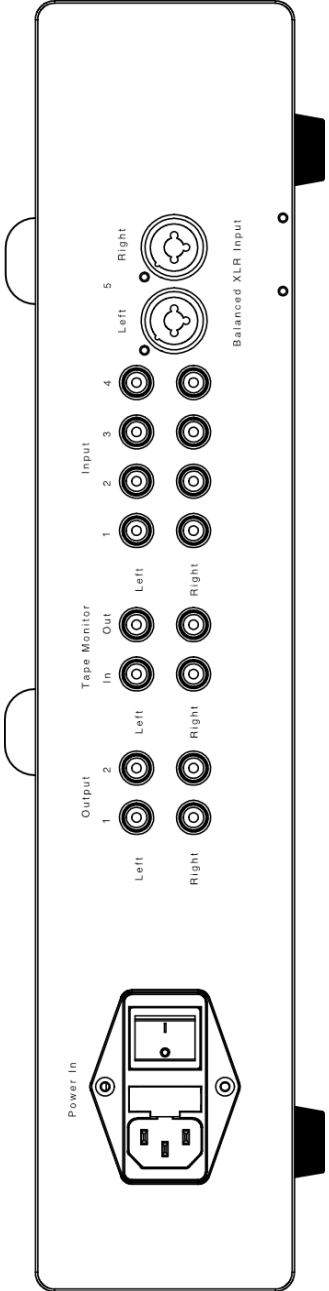
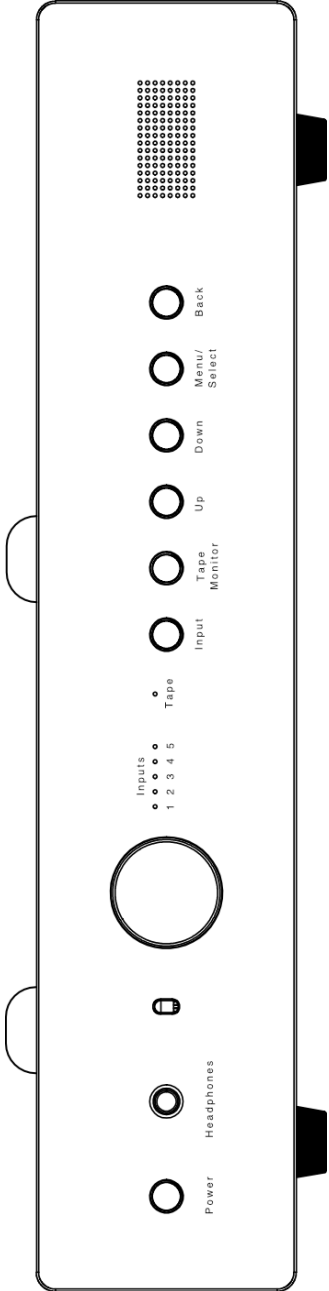
7. Linear Tube Audio reserves the right to improve or change its products without obligation to modify previously manufactured units.

Service Note

ZOTL amplifiers use a unique circuit and technicians familiar with other tube amplifiers may not know how to correctly work on LTA products. Please contact us before attempting any alteration or repair, whether you are concerned about the warranty or not.

Specifications

Circuit Type:	Push-Pull Class A
Power Output:	1W (4 Ohm), 0.5W (8 Ohm)
Input Sensitivity:	0.6V RMS for full output
Input Impedance:	50K
Headphone Output impedance:	2 Ohms
Preamp Output Impedance:	50 Ohms
Gain:	10.3dB (4 Ohm load) 12.4dB (8 Ohm load)
Noise:	-90dB
Frequency Response:	+/- 1dB, 10Hz-20kHz (4 Ohm Load) +/- 1dB, 5Hz-50kHz (8 Ohm Load)
THD:	1%
Power consumption:	33W
Input Voltage with SMPS:	Universal
Input Voltage with LPS+:	110/220 Selectable; 100V available
Tube Complement:	(2x) 12AT7, (2x) 6SN7/12SN7
Size:	W: 17" (43.2cm), H: 4.2: (10.7cm), D: 12.4" (31.5cm)
Weight:	14 lbs (6.35 kg)
Shipping Weight:	22 lbs (10kg)



Quick Start

Remove preamplifier from the box.

Attach the power cable to the IEC connector and plug into an outlet. Turn the power switch next to the IEC connector on. This will not turn the preamplifier on (unless you have Power-on Override turned on, which you can do in the menu).

Hook up your sources as well as your power amp.

Once your system is set up and everything is hooked up, turn on your preamplifier via the power button on the front panel. The buttons are capacitive, so you only need to touch them, they do not push in.

There is a turn-on delay of several seconds to allow the unit to warm up.

Operation

The unit is designed to be powered on indefinitely without harm. The front panel power button powers down the amplifier but the power supply remains on in a nearly idle state. To turn the amp completely off, use the power switch next to the IEC connector.

While it does not generate much heat, the unit is air cooled and should be placed somewhere with adequate ventilation.

The front of the preamplifier has the power button, headphone jack, IR sensor, volume knob, input status LEDs, tape monitor LED, input selection button, tape monitor button, menu navigation buttons, and the display.

The back of the preamplifier features the IEC connector, power switch, two sets of RCA outputs, tape in, tape out, four sets of RCA inputs, and one set of XLR inputs.

Inputs

There are five total inputs: four RCA and one XLR. The XLR provides an optional transformer-coupled balanced input. Using an input transformer, the balanced input signal experiences no voltage loss and maintains its high noise rejection as it is converted into a single-ended signal.

If you choose not to get the transformer option, the XLRs are wired as single-ended inputs, with the negative signal voltage tied to ground. Though there is voltage loss, using the XLR inputs with a balanced source may sound better than using the single-ended output from that same source; it would be equivalent to using an XLR > RCA cable.

Outputs

The two preamplifier outputs are paralleled and will put out the same amount of power. If you are using both outputs at the same time, the output voltage of the preamplifier will be shared.

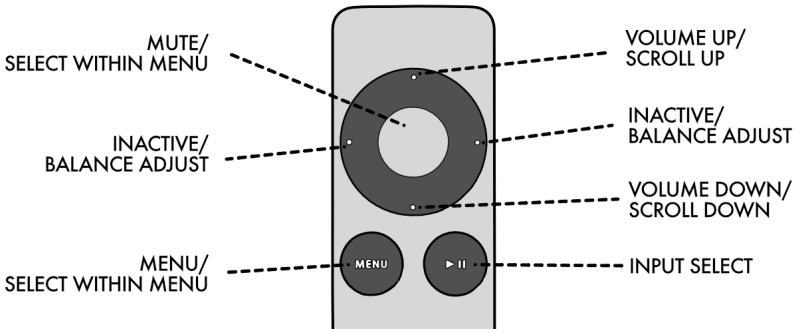
The headphone output is a 1/4" jack. When a headphone plug is inserted, the preamplifier outputs are muted.

Tape Monitor

The Tape Output always functions as an unattenuated output directly from the selected input. When Tape Monitor is selected via the button on the front panel, the microZOTL Preamplifier outputs the signal from the Tape Input, while still sending the selected, non-Tape input to the Tape Output.

User Interface and Controls

The front panel features a power switch, input switch, volume knob, and display. The remote control is able to adjust volume, mute, and access a menu with more configurable options.



Remote Control

Up and Down Buttons: Volume Up and Volume Down. They can be held down or used in a single step mode. In Menu mode, they scroll up and down.

Left and Right Buttons: Unused unless activated in the menu to function as Balance control or input selectors. In the Menu, they act as selectors.

Center Button: Mute. When the unit is muted, there are two Xs on the display. When in Menu, it acts as a Select button.

Menu Button: Enters Menu Mode. In the menu, this functions as a Select button.

Play/Pause Button: Toggle inputs. [When held down for 30 seconds, it will pair an Apple remote to the unit. Pairing confirmation appears on the display when this is successful.]

Menu

The menu is accessed via the Menu button on the remote control. Scroll with the up and down buttons to see menu options. Pause on an option to see the entire title scroll by.

Balance: Use the right and left remote buttons to adjust the balance. The front panel displays the balance setting as you adjust - two bars in the center indicate that the balance is at 0 (both channels are equal). When the desired balance level is selected, press the center button to save the setting. A message will appear on the display to indicate which setting the balance has been set to. The balance setting is saved across all inputs and will be utilized upon power up to the last saved setting. The maximum balance setting is 16 levels difference.

Gain Level: Adjusts the volume control to allow for finer low-level attenuation when using sensitive speakers or headphones. Gain Level is saved for the selected input. Each input must be set individually. 0dB is the default setting.

Brightness: The front panel display can be set to 16 levels of brightness. The brightness levels are saved and recalled upon power on.

Home Theater Input: Home Theater Input locks a selected input at a fixed volume level to allow external volume control. Select the input desired to have a fixed volume. This setting is saved and the selected input will henceforth be locked at that volume level until the Home Theater mode is removed from that input.

Display Timeout: The volume display and input LEDs can be set to turn off after 10 seconds. They will reappear if a button on the remote control is pressed or the volume knob or front panel switch is changed. There are 3 settings:

OFF - The volume display and input LEDs remain on.

VOL - The volume display turns off but the input LEDs remain on.

ALL - The volume display and input LEDs turn off.

L-R Remote Arrows: There are two functions that can be selected for the Left-Right Arrow buttons as follows:

Off – the remote Left-Right arrow buttons are deactivated.

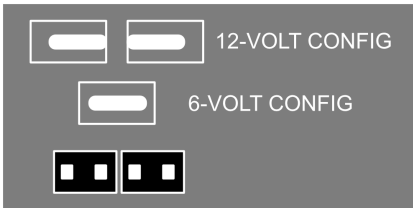
BAL – the remote Left-Right arrow buttons will control the balance.

Inp – the remote Left-Right arrow buttons will select the input.

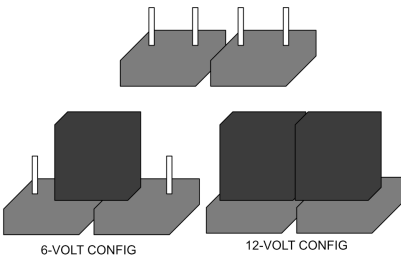
Power-On Override: When activated, the unit powers on when the AC power is turned on without needing push the front panel power button.

Reset to Default: The amplifier controls are set to Balance = 0, Gain Level = 0dB, Display Timeout = Off, Home Theater Mode = None, and Display Brightness = 8, and Remote Left-Right Arrow buttons set to Not Active.

Tube Heater Voltage Jumper Settings



The microZOTL Preamplifier comes with selected old-stock 12SN7 tubes as its standard output tubes. By changing the jumpers on the circuit board, the amp can also use 6SN7 tubes. These are identical sonically, they simply use different voltages for the heater. When switching from one to the other, be sure to set the jumpers on the boards to the correct position. A 6-volt tube like the 6SN7 will burn out quickly if given 12 volts.



On the circuit board, there are two headers next to each other, for a total of 4 pins. There is a small diagram showing the correct way to orient the jumpers. When using only a single jumper in 6V operation, there is a header labeled “park” where you can store the extra jumper.

To use 6SN7s, set the jumpers to 6V by placing a single jumper across the center two pins. To use 12SN7s, set the jumpers to 12V by using two jumpers, covering all 4 pins.

Tube Replacement/Rolling: The amplifier operates the tubes in a manner that maximize tube life and the tubes are expected to last over 10 years of regular use. The sockets are tight, so gently rock the tube pins until you are able to remove the tubes. We use high-quality ceramic tube sockets with gold pins which are designed in such a way that the white ceramic part may shift slightly. This is an intentional design; the tube socket is very secure.

We have heard no reports of any trouble using equivalents of 6SN7, 12SN7, or 12AT7 tubes. For lower gain and a more laid-back sound, you can substitute 12AU7 tubes for the 12AT7s. Do not use 12AX7s. When replacing the tubes, use matched pairs.

Fuses: The microZOTL Preamplifier has a fuse on the audio board and two fuses in the LPS+. All are 5x20mm. There is a 2.5A Fast Blow fuse on the audio board and there are two 4A Slow Blow fuses in the IEC inlet of the Power Supply.

**For more information and FAQs, please visit
www.lineartubeaudio.com or contact us at
hifi@lineartubeaudio.com.**

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