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› TOPPING A70 Pro Fully Balanced Headphone Amplifier and Preamplifier User Manual

Topping A70 Pro

TOPPING A70 Pro Fully Balanced Headphone Amplifier and Preamplifier User Manual

Model: A70 Pro

1. PRODUCT OVERVIEW

The TOPPING A70 Pro is a high-performance fully balanced headphone amplifier and preamplifier designed for superior audio reproduction. It incorporates advanced circuit architecture and user-friendly features to enhance your listening experience.

Performing the pinnacle of music

A70 Pro

Fully balanced headphone amplifier



Image 1.1: Front view of the TOPPING A70 Pro, showcasing its display and controls.

Key Features:

- **Optimized Circuit Architecture:** Features an optimized circuit architecture with a newly developed ultra-low noise input stage, improving balanced input noise performance and increasing input impedance to 20k Ω for enhanced compatibility.

The revised gain architecture further reduces noise and distortion at high gain settings.

- **Ground Loop Noise Elimination:** Includes a GND/LIFT switch to eliminate ground loop noise when multiple devices are connected. If ground loop noise occurs, switch to LIFT to resolve it.
- **Aurora UI:** The Aurora UI provides a new user experience with a full-color screen and three touch buttons. Users can switch between playback information, FFT, and VU meter displays.
- **Relay Volume Control:** Equipped with a relay-based R2R volume control module, ensuring precise and consistent volume adjustment with long-term reliability, even at low levels.
- **Headphone Amplifier and Preamp Functionality:** Functions as both a powerful headphone amplifier and a high-performance preamplifier. It features low output impedance (RCA: 500Ω, XLR: 100Ω) for broad compatibility with various power amplifiers. A comprehensive remote control is included for convenient operation.

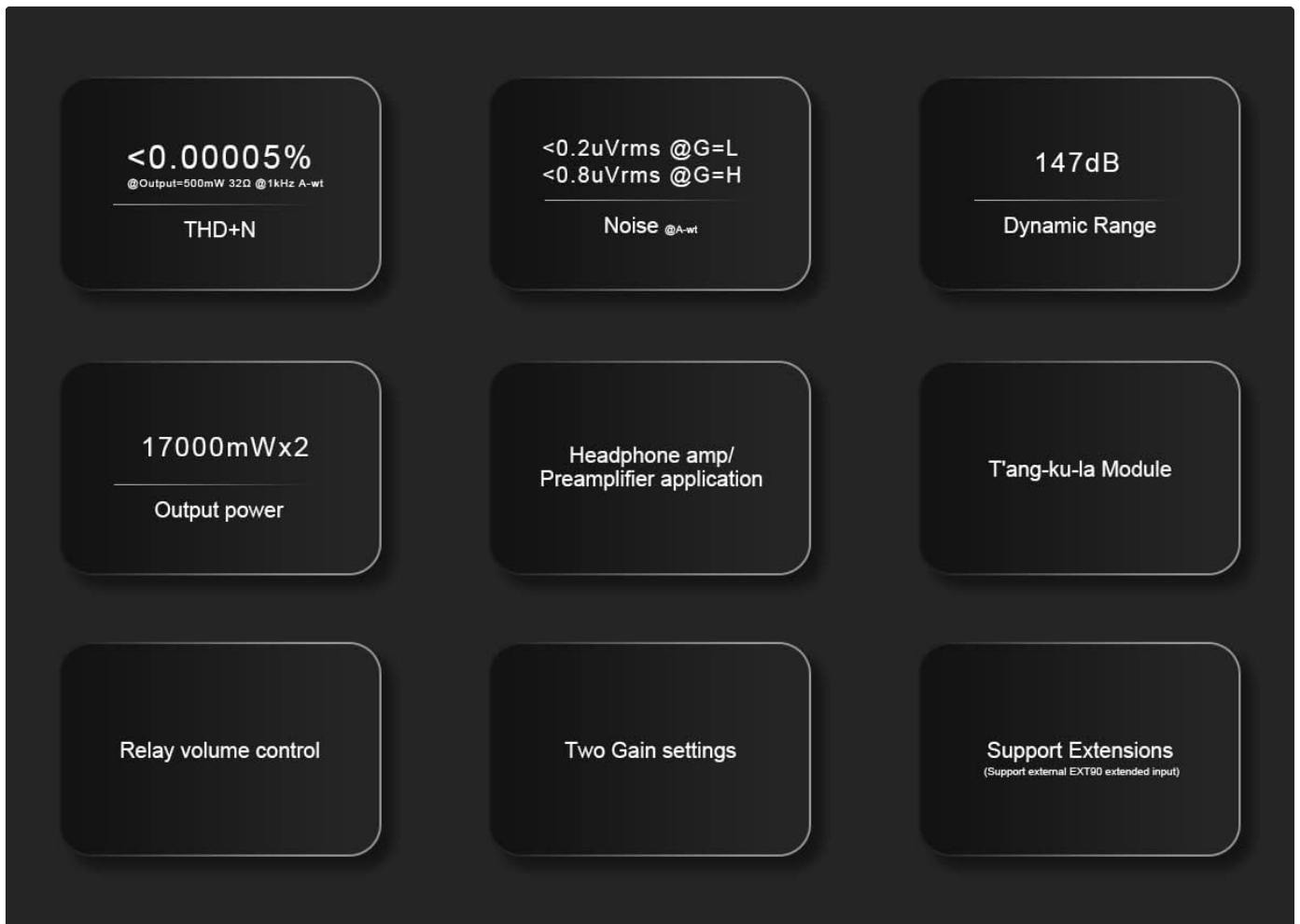


Image 1.2: Overview of the A70 Pro's core features and performance metrics.

2. SETUP

2.1 Unpacking and Inspection

Carefully remove the A70 Pro from its packaging. Inspect the unit for any signs of damage. Ensure all accessories, including the power cable and remote control, are present.

2.2 Connecting to Power

Connect the provided power cable to the IEC power AC connection on the rear panel of the A70 Pro and then to a suitable AC power outlet. The unit can be powered on via the soft start button on the front or with the included remote control.

2.3 Audio Connections

The A70 Pro offers various input and output options:

- **Inputs:** One set of balanced XLR inputs and one set of single-ended RCA inputs are available on the rear panel.
- **Outputs (Headphone):** The front panel features 4-pin XLR, 4.4mm Pentacon, and 6.3mm headphone output connections.
- **Outputs (Preamplifier):** Balanced XLR and single-ended RCA outputs are located on the rear panel for connecting to power amplifiers or active speakers.

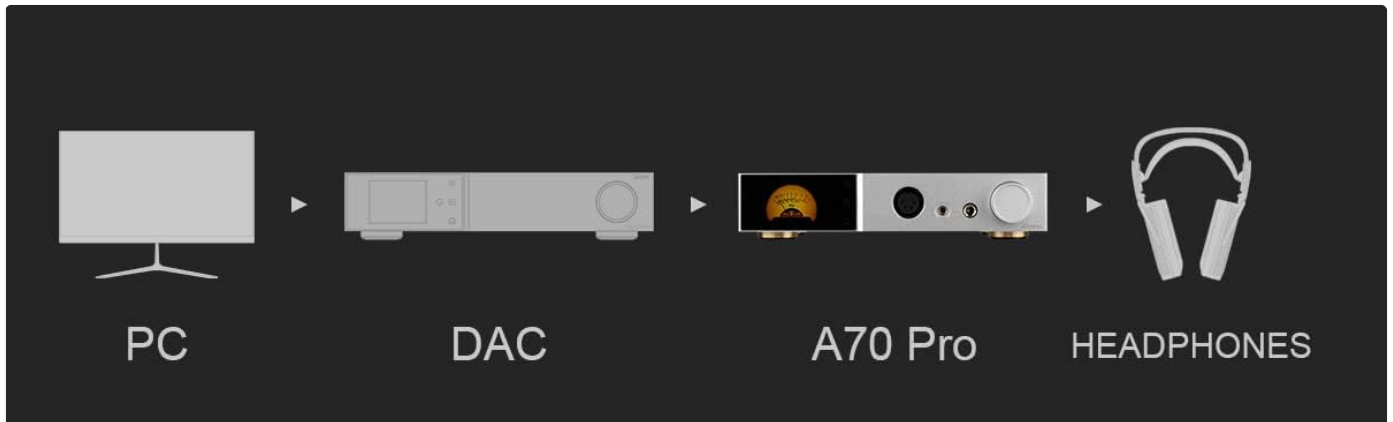


Image 2.1: Typical connection setup: PC to DAC, DAC to A70 Pro, and A70 Pro to headphones.

2.4 Optional Expansion (EXT90)

The A70 Pro supports input expansion with the optional EXT90 module (sold separately). Connecting the EXT90 provides additional balanced XLR and single-ended RCA inputs, expanding the total to four balanced XLR and two single-ended RCA inputs.

Expandable inputs

The A70 Pro has one set of balanced XLR and one set of single-ended RCA inputs. But with the Ext90 input expansion, you get a total of four balanced XLR and two single-ended RCA inputs.



*The Ext90 needs to be purchased separately.

Image 2.2: The A70 Pro connected to the optional EXT90 expansion module for additional inputs.

3. OPERATING INSTRUCTIONS

3.1 Power On/Off

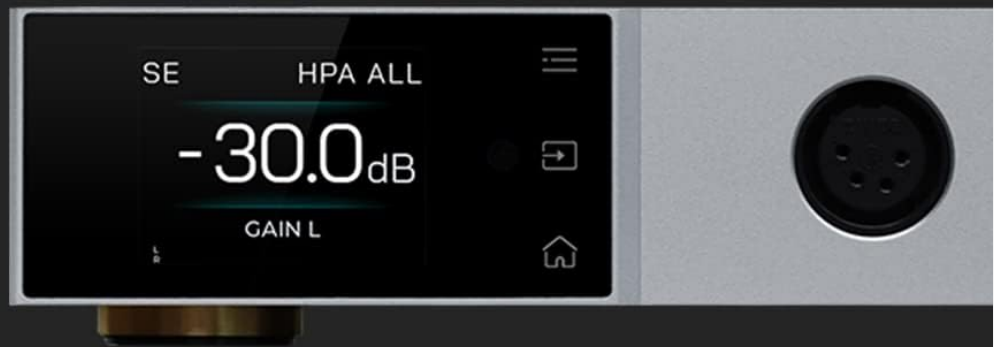
Press the power button on the front panel or the remote control to turn the unit on or off. The display will illuminate upon power-up.

3.2 Volume Control

The A70 Pro features a precise relay-based R2R volume control. Adjust the volume using the rotary knob on the front panel or the volume up/down buttons on the remote control. The current volume level is displayed on the screen.

Independent volume memory

The A70 Pro can memorize 8 sets of volume separately and automatically revert to the last used volume the next time the output is selected.



*The 8 groups are headphone amp + preamp output, earphone all output, preamp all output, only 6. 35mm output, only 4. 4mm output, XLR output, RCA output and XLR output.

Image 3.1: The display showing the current volume level and gain setting.

The A70 Pro can memorize up to 8 separate volume settings. It automatically reverts to the last used volume for each output selection.

3.3 Aurora UI Navigation

The full-color display and three touch buttons provide intuitive control. Use the touch buttons to navigate menus and select options. The display offers various modes, including playback information, FFT (Fast Fourier Transform), and VU (Volume Unit) meter displays, which can be switched according to user preference.

3.4 Gain Settings

The A70 Pro features two gain settings (Low and High) to accommodate a wide range of headphones and audio sources. Adjust the gain setting via the menu or remote control to match your headphones' sensitivity and achieve optimal sound quality without distortion.

3.5 Input Selection

Select the desired audio input (XLR or RCA) using the input selector on the front panel or the remote control. The active input will be indicated on the display.

4. MAINTENANCE

4.1 Cleaning

To clean the unit, use a soft, dry cloth. Do not use liquid cleaners or abrasive materials, as they may damage the finish or internal components.

4.2 Storage

When not in use for extended periods, store the A70 Pro in a cool, dry place away from direct sunlight and extreme temperatures.

5. TROUBLESHOOTING

5.1 No Sound

- Ensure the unit is powered on and the volume is not set to minimum or muted.
- Verify that the correct input source is selected.
- Check all audio cables for secure connections.
- Confirm that your headphones or connected power amplifier are functioning correctly.

5.2 Ground Loop Noise

If you experience humming or buzzing sounds, especially when multiple devices are connected, it may be due to a ground loop. The A70 Pro is equipped with a GND/LIFT switch on the rear panel to address this.

- Locate the **GND/LIFT** switch on the rear panel.
- If noise is present, switch the setting to **LIFT**. This can help break the ground loop and eliminate the noise.

Ground Loop Noise Disappearing magic

When multiple devices are used in combination, ground loop noise may be encountered.

A70 Pro adds a GND/LIFT switch, when ground loop noise is encountered switch to LIFT and the noise will disappear.



Image 5.1: Rear panel detail showing the GND/LIFT switch for ground loop noise reduction.

6. SPECIFICATIONS

Feature	Detail
Brand	Topping
Model Number	A70 Pro
Color	Silver
Output Power (SE IN/SE OUT, BAL IN/SE OUT)	<ul style="list-style-type: none"> • 6000mW x 2 @16Ω (THD+N<0.1%) • 17000mW x 2 @16Ω (THD+N<0.1%) • 3000mW x 2 @32Ω (THD+N<0.1%) • 12600mW x 2 @32Ω (THD+N<0.1%)
Output Power (SE IN/BAL OUT, BAL IN/BAL OUT)	<ul style="list-style-type: none"> • 1550mW x 2 @64Ω (THD+N<0.1%) • 6000mW x 2 @64Ω (THD+N<0.1%) • 330mW x 2 @300Ω (THD+N<0.1%) • 1370mW x 2 @300Ω (THD+N<0.1%) • 165mW x 2 @600Ω (THD+N<0.1%) • 670mW x 2 @600Ω @600Ω (THD+N<0.1%)
Load Impedance	>8Ω
THD+N	<0.00005% @500mW 32Ω (1kHz A-wt)
Noise Level	<0.2uVrms @G=L, <0.8uVrms @G=H
Dynamic Range	147dB (overall), 106.3dB @50mV output
Input Impedance (Balanced)	20kΩ
Preamplifier Output Impedance (RCA)	500Ω
Preamplifier Output Impedance (XLR)	100Ω
Package Dimensions	37.01 x 24 x 8.89 cm
Weight	2.18 kg
First Available Date	2023/05/15

Low noise is a perseverance

Actual noise level of A70 Pro $<0.2\mu\text{Vrms}$ @G=L , $<0.8\mu\text{Vrms}$ @G=H
Excellent performance at both high and low gain.

At an output voltage of 50mV, the A70 Pro achieves a far superior dynamic range of 106.3dB.

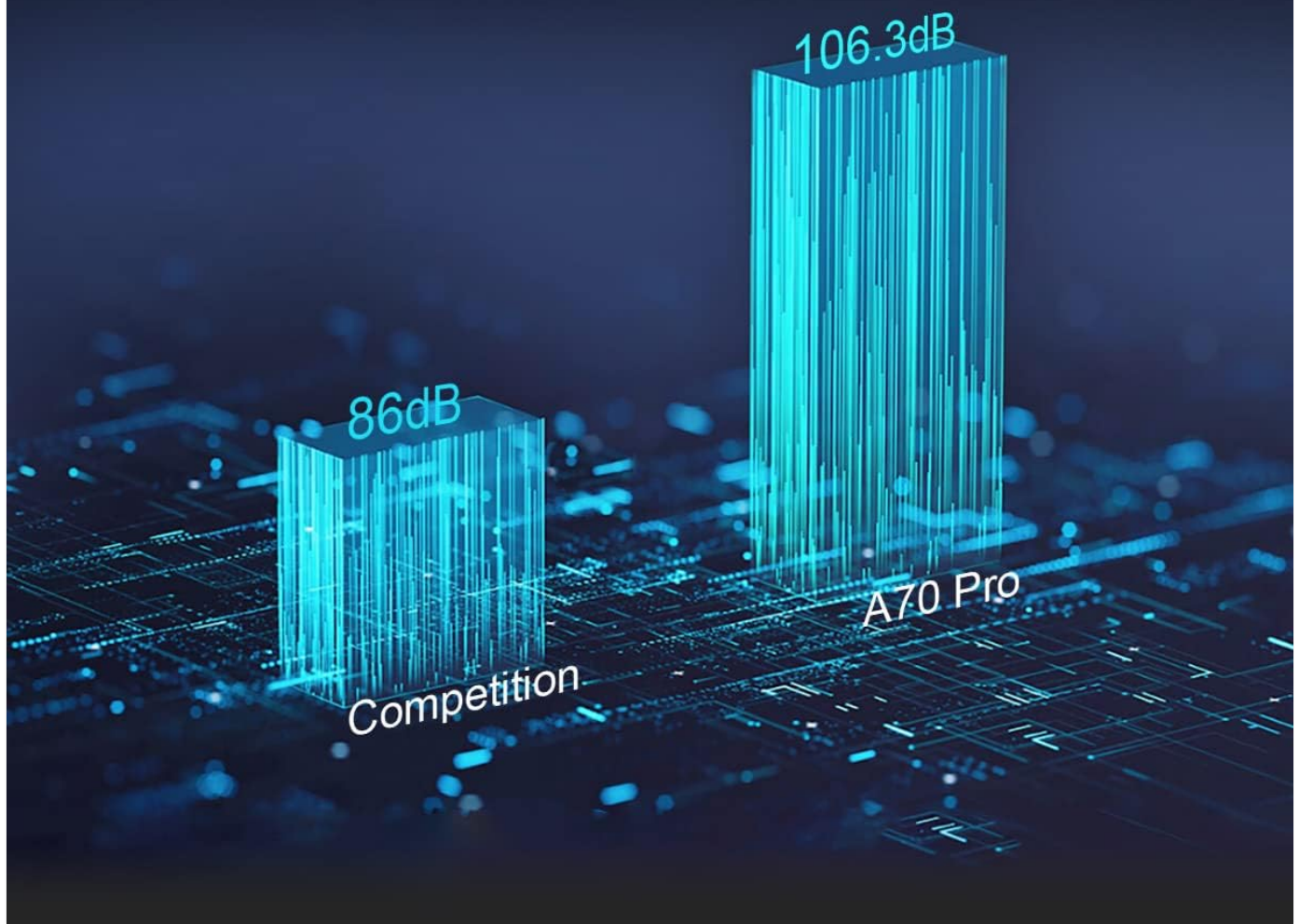


Image 6.1: Comparison of A70 Pro's low noise performance.

T'ang-ku-la Module



T'ang-ku-la means a mountain that an eagle cannot fly over, the source of the Yangtze River. It symbolizes our spirit of climbing the peak and the ultimate performance of T'ang-ku-la module.

The T'ang-ku-la Module uses a new three-stage feedback circuit. Further reducing noise and high frequency distortion, making the dynamic range rise to an unmatched 147dB new realm. The new technology greatly reduces heat generation, thus greatly improving reliability, extending electronic component life, and reducing thermal noise.

Image 6.2: Internal view highlighting the T'ang-ku-la Module, a key component for performance.

7. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation included with your product or contact the manufacturer directly. Keep your purchase receipt as proof of purchase for warranty claims.

