Fanmusic HP70

Gustard Audalytic HP70 User Manual

Fully Balanced Discrete Headphone Amplifier & Pure Preamplifier

1. Introduction

Thank you for choosing the Gustard Audalytic HP70. This device is a high-performance, fully balanced discrete headphone amplifier and pure preamplifier designed to deliver exceptional audio fidelity. It features a Class A amplification stage, advanced volume control, and versatile input/output options for a superior listening experience. This manual provides detailed instructions for setup, operation, and maintenance to ensure optimal performance and longevity of your HP70.

Figure 1: Front view of the Gustard Audalytic HP70 in silver.

2. Product Overview

2.1 Front Panel

The front panel of the HP70 features essential controls and headphone outputs for easy access and operation.

Figure 2: Detailed view of the HP70 front panel.

- **Power Button:** Used to turn the unit on or off.
- **Volume Knob:** Controls the output volume. This is an R-2R relay volume control for precise, lossless adjustment.
- **6.35mm Single-Ended Headphone Output:** Standard headphone jack for single-ended headphones.
- **4.4mm Balanced (TRS) Headphone Output:** Balanced headphone jack for compatible headphones.

2.2 Rear Panel

The rear panel provides all input and output connections for integrating the HP70 into your audio system.

Figure 3: Rear panel connections of the HP70.

- **AC Input 115V/230V:** Power input for the device.

- **Fuse:** User-replaceable fuse for power protection.
- **DC Power Input (12V-18V):** Alternative DC power input.
- **LAN Input:** For network connectivity.
- **USB Input:** For connecting to a computer or other digital source.
- **Optical Input:** Digital optical audio input.
- **Coaxial Input 1 & 2:** Digital coaxial audio inputs.
- **RCA Inputs (L/R):** Analog RCA stereo inputs.
- **XLR Inputs (L/R):** Balanced analog XLR stereo inputs.
- **Balanced Output XLR (L/R):** Balanced analog XLR stereo outputs for preamplifier function.
- **Single-Ended Output RCA (L/R):** Analog RCA stereo outputs for preamplifier function.
- **Bluetooth Antenna:** For wireless audio reception.
- **TF Card Slot:** For local media playback (if supported by firmware).

2.3 Internal Components

The HP70 features a meticulously designed internal layout, showcasing its fully balanced discrete Class A amplifier architecture and multi-stage voltage regulation.

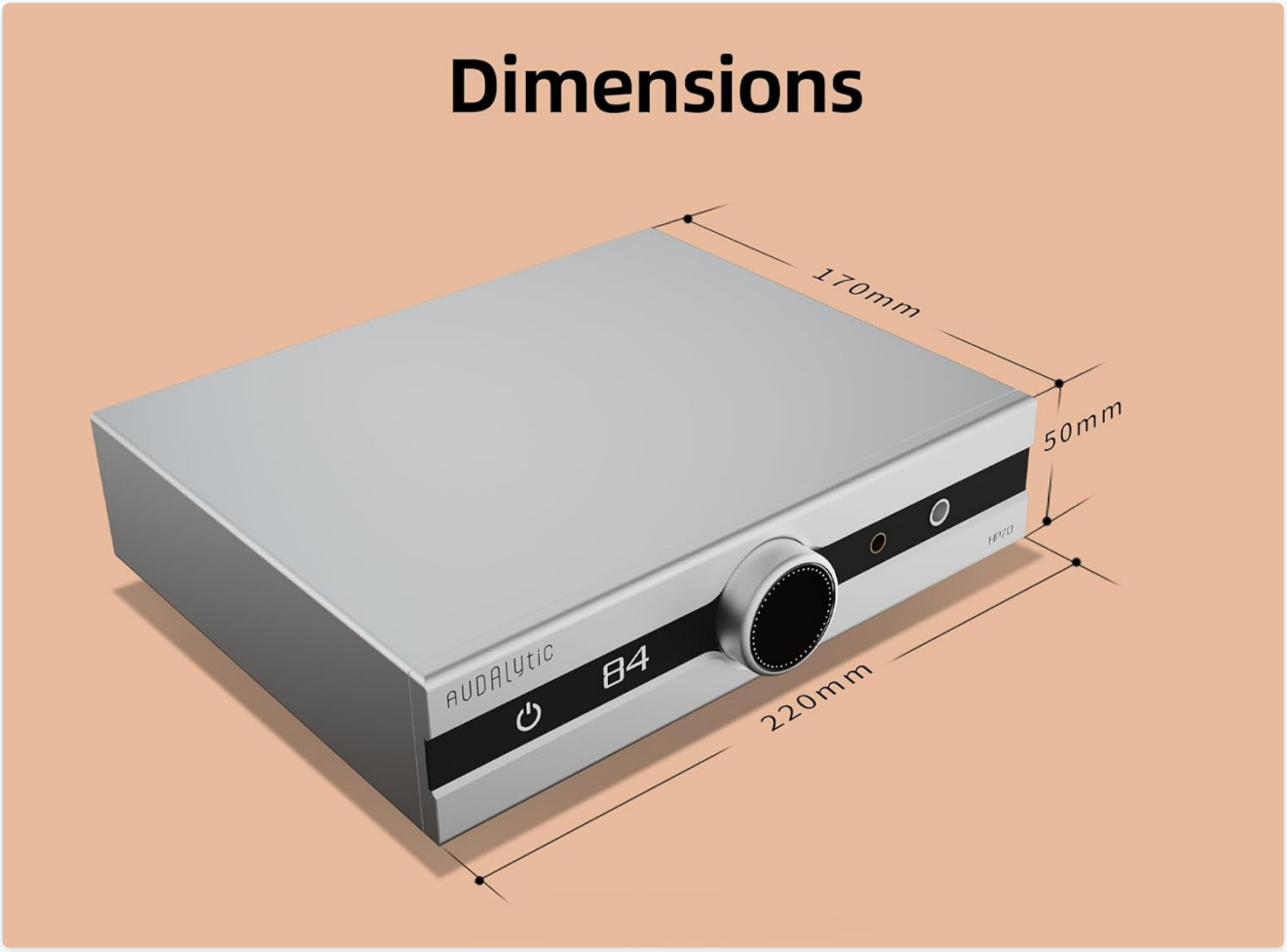

Figure 4: Internal view highlighting the discrete Class A amplifier stage with power transistors.

Fully Balanced Discrete Class A Amplifier

This fully balanced discrete Class A amplifier utilizes 4 pairs of power transistors to ensure ample driving power and superior control.
The use of discrete components offers greater flexibility, allowing for precise fine-tuning of each stage to achieve optimal performance. This design approach also provides enhanced development potential. Furthermore, distortion characteristics are more manageable, enabling the circuit architecture to deliver a wider range of sonic characteristics with greater versatility. The post-amplification stage can be disabled, allowing the unit to function as a dedicated pure preamplifier.

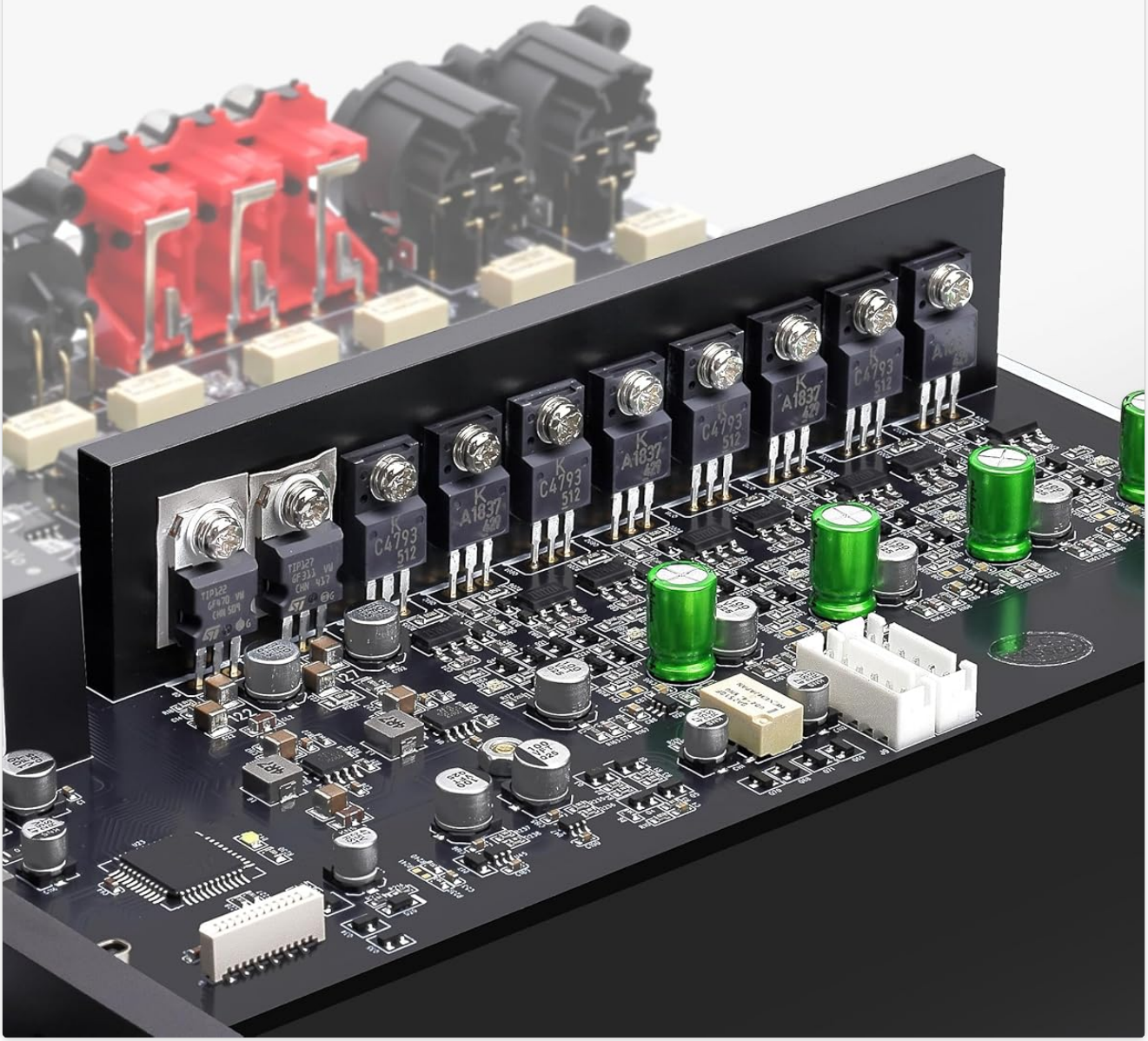

Figure 5: Internal view detailing the input stage and built-in low-noise power supply.

3. Setup

3.1 Unpacking

Carefully remove the HP70 and its accessories from the packaging. Ensure all items are present:

- Gustard Audalytic HP70 unit (x1)
- Remote control (x1)

- User manual (x1)
- Power cable
- Bluetooth antenna

3.2 Power Connection

1. Ensure the HP70 is placed on a stable, level surface with adequate ventilation.
2. Connect the provided power cable to the AC input on the rear panel of the HP70.
3. Plug the other end of the power cable into a suitable AC power outlet (115V/230V, 50/60Hz).
4. Alternatively, a 12V-18V DC power supply can be used with the DC power input.

3.3 Audio Connections

Connect your audio sources and output devices to the HP70 using appropriate cables.

- **Input Sources:** Connect your digital sources (e.g., CD player, streamer, computer) to the USB, Optical, or Coaxial inputs. Connect analog sources (e.g., turntable preamplifier, DAC) to the RCA or XLR analog inputs.
- **Output Devices (Preamplifier Mode):** For connecting to a power amplifier or active speakers, use the Balanced XLR or Single-Ended RCA outputs on the rear panel.
- **Headphones:** Connect your headphones to either the 6.35mm single-ended or 4.4mm balanced (TRS) output on the front panel.
- **Bluetooth Antenna:** Screw the provided Bluetooth antenna onto its connector on the rear panel for wireless connectivity.

4. Operating Instructions

4.1 Power On/Off

Press the power button on the front panel to turn the HP70 on or off. The unit will typically display its status or volume level when powered on.

4.2 Volume Control

Rotate the large knob on the front panel clockwise to increase volume and counter-clockwise to decrease it. The HP70 uses an R-2R relay volume control for precise, lossless adjustment and excellent channel matching.

4.3 Input Selection

Use the remote control or a dedicated button (if available on the front panel, refer to specific model display) to cycle through the available input sources (USB, Optical, Coaxial 1, Coaxial 2, RCA, XLR, Bluetooth, TF Card).

4.4 Preamplifier Mode

The HP70 can function as a dedicated pure preamplifier. In this mode, the post-amplification stage (headphone amplifier) can be disabled. This allows for seamless switching between headphone and speaker listening without needing to disconnect headphones. Refer to the on-screen menu or remote control for options to enable/disable the headphone amplifier section when using the XLR or RCA line outputs.

4.5 Headphone Amplifier Mode

When headphones are connected to the front panel outputs, the HP70 operates as a powerful headphone amplifier. Ensure the volume is set to a low level before playing audio to protect your hearing.

4.6 Remote Control

The included remote control provides convenient access to power, volume, input selection, and other settings. Familiarize yourself with the remote's buttons for full control over the HP70's functions.

5. Key Features

- **Fully Balanced Discrete Class A Amplifier:** Utilizes 4 pairs of power transistors for ample driving power and superior control. Discrete components allow for precise fine-tuning and enhanced development potential, offering a wider range of sonic characteristics. The post-amplification stage can be disabled for pure preamplifier operation.
- **Preamplifier with Socketed Op-Amps:** The preamp section uses two socketed LME49720 dual op-amps. The preamp output can be disabled for seamless switching between headphone and speaker outputs.
- **Fully Balanced Input Stage:** Features a single-ended to balanced conversion circuit, allowing RCA inputs to benefit from full balanced drive performance.
- **Multi-stage Voltage Regulation:** Designed with multiple stages of voltage regulation to achieve lower ripple noise and reduced interference, resulting in cleaner audio reproduction.
- **R-2R Relay Volume Control:** Provides lossless precision adjustment with guaranteed channel matching across all 4 audio paths.

6. Specifications

6.1 General

- **Brand:** Fanmusic (Gustard Audalytic)
- **Model:** HP70
- **Color:** Silver
- **Power Supply:** AC 115V/230V, 50/60Hz or DC 12V-18V
- **Power Consumption:** <15W
- **Dimensions (WxDxH):** 220 x 170 x 50 mm (excluding protrusions)
- **Net Weight:** 1.6 kg
- **Connectivity Technology:** RCA, XLR, USB, Optical, Coaxial, Bluetooth, LAN
- **Controller Type:** Remote Control
- **Compatible Devices:** Speaker, Tablet, Personal Computer, Smartphone, Amplifier, Headphone
- **Audio Output Mode:** Stereo, Surround (5.1 channel configuration)

Figure 6: Dimensions of the Gustard Audalytic HP70.

6.2 Preamplifier Analog Output (Rear XLR)

- **Frequency Response:** 20Hz-40kHz (±0.1dB)
- **Signal-to-Noise Ratio:** 122dB
- **Channel Crosstalk:** <-120dB @ 1kHz
- **THD+N:** <0.0004%
- **IMD:** <0.0004%

6.3 Headphone Amplifier Output (6.35mm Single-Ended / 4.4mm Balanced)

- **Output Impedance (6.35mm):** 0.1Ω
- **Output Impedance (4.4mm Balanced):** 0.2Ω
- **Frequency Response:** 20Hz-40kHz (±0.1dB)
- **Signal-to-Noise Ratio:** >120dB

- **Channel Crosstalk:** -118dB @ 1kHz
- **THD+N:** <0.0005% (1kHz, 1000mW into 32Ω)
- **IMD:** <0.0005% (1000mW into 32Ω)
- **Maximum Output Power (Clipping):** ≈2000mW (32Ω, balanced)

6.4 Digital Inputs

- **RCA Inputs (2 sets):** Input Sensitivity: Typical 2Vrms, Maximum 3Vrms; Input Impedance: 20kΩ
- **XLR Balanced Input (1 set):** Input Sensitivity: Typical +15dBu (5V), Maximum +18dBu (6V); Input Impedance: 10kΩ

7. Maintenance

To ensure the longevity and optimal performance of your Gustard Audalytic HP70, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to wipe the exterior of the unit. Avoid using liquid cleaners, aerosols, or solvents, as these may damage the finish or internal components.
- **Ventilation:** Ensure the unit has adequate ventilation. Do not block the ventilation openings. Avoid placing the unit in enclosed spaces or on soft surfaces that may impede airflow.
- **Environment:** Operate the HP70 in a clean, dry environment, away from direct sunlight, heat sources, excessive dust, and moisture.
- **Power Off When Not in Use:** If the unit will not be used for an extended period, it is recommended to power it off and disconnect it from the power outlet.

8. Troubleshooting

If you encounter issues with your HP70, refer to the following common troubleshooting steps:

- **No Power:**
  - Check if the power cable is securely connected to both the unit and the power outlet.
  - Verify that the power outlet is functional.
  - Check the fuse on the rear panel. If blown, replace it with a fuse of the same type and rating.
- **No Sound:**
  - Ensure the correct input source is selected.
  - Check all audio cable connections (inputs and outputs) for secure fit.
  - Increase the volume level on the HP70 and your source device.
  - If using preamplifier outputs, ensure your power amplifier or active speakers are powered on and functioning correctly.
  - If using headphones, ensure they are properly plugged into the correct jack and are functional.
- **Distorted Sound:**
  - Check if the input signal level is too high, causing clipping. Reduce the output volume from your source device.
  - Ensure all cables are in good condition and properly connected.
  - Test with a different audio source or headphones/speakers to isolate the issue.

- **Remote Control Not Working:**
  - Check and replace the batteries in the remote control.
  - Ensure there are no obstructions between the remote and the HP70's IR receiver.

If the problem persists after attempting these steps, please contact customer support.

9. Warranty and Support

9.1 Warranty Information

The Gustard Audalytic HP70 comes with a **1-year warranty** from the date of purchase, covering manufacturing defects. This warranty does not cover damage caused by misuse, accidents, unauthorized modifications, or normal wear and tear. Please retain your proof of purchase for warranty claims.

9.2 Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact the seller or authorized distributor. For products purchased via Amazon, the seller is **SHENZHENAUDIO**. Please refer to your purchase documentation for specific contact details.