KGUSS XA-02

KGUSS xDuoo XA-02 Balanced DAC Headphone AMP User Manual

Model: XA-02

1. PRODUCT INTRODUCTION

The xDuoo XA-02 is a high-fidelity small desktop balanced headphone amplifier that integrates USB, Optical, Coaxial, and Bluetooth audio decoding with an analog audio input. It features an OLED 1.3-inch screen for displaying working status. The USB audio decoder utilizes XMOS's XU316 chip, supporting digital audio signals up to PCM 32Bit/384kHz, MQA, and DSD256. Optical and coaxial inputs support maximum PCM 24Bit/192kHz and DSD64 (DOP). Bluetooth connectivity uses QCC5125, supporting popular codecs like aptX, aptX_HD, aptX_LL, LDAC, and AAC. The analog amplification part adopts a fully balanced Class A design structure, providing powerful output and strong load capacity to drive various headphones, enhancing sound dynamics and restoring audio fidelity.

Image: Front and rear view of the xDuoo XA-02 Balanced DAC Headphone AMP, highlighting its compact design and various input/output options.

Video: An overview of the xDuoo XA-02 Balanced DAC Headphone AMP, showcasing its design and key features.

2. PRODUCT FEATURES

- **1.3-inch OLED Screen:** Displays music information and operational status clearly.

- **USB Audio Decoding:** Supports asynchronous transfer mode for PCM 32Bit/384kHz, MQA, and DSD256.

- **High-Performance DAC Chip:** Features ESS's ES9039Q2M chip for superior decoding of native DSD, DXD, and PCM signals.

- **Advanced Bluetooth Audio:** Bluetooth 5.1 with support for SBC, AAC, aptX, aptX_LL, aptX_HD, and LDAC codecs.

- **Coaxial/Optical Audio:** Supports PCM 24Bit/192kHz and DSD64 signal input.

- **Optimized Power Design:** Built-in filter circuit and high-efficiency power conversion circuit, with separate power supply to critical components for optimal performance.

- **Class A Amplifier:** Utilizes transistors in a Class A circuit for strong load capacity, capable of driving various headphones.

- **Premium Audio Capacitors:** Employs ELNA's SILMIC professional audio capacitors for power filter, ensuring soft, warm sound and splendid high frequencies.

- **Output Relay Protection:** Built-in relay protection prevents 'pop' noise during power on/off and safeguards connected headphones and the device.

1.6.35mm headphone out
2.4.4mm Balanced headphone out
3.Screen
4.Menu key: press this key to enter or exit the menu setting windows, then rotate the volume
  knob to select the menu which you want, and press the volume knob to confirm.

Image: Diagram illustrating the truly balanced output path from decoding to the amplifier circuit, designed to reduce noise and improve channel separation.

5.Pairing (bluetooth) button: long press for 3 seconds to force into pairing state.
6.Knob (Multi-function):
  1) Turn up the volume clockwise; turn it down counterclockwise;
  2) Short press to change input channel: USB in, Coaxial, Optical and Bluetooth in;
  3) In the menu settings windows, press this button to setting.
  Backlight: The light changes color according to the volume, as follows:

Backlight	Dark cyan→Bright cyan		Light red→Deep red	
Volume	0-20	21-45	46-75	76-99

7.AUX Out: output from DAC.
8.Coaxial IN
9.Optical IN
10.USB IN
11.Upgrade interface
12.Power input: connect to AC100-240V.
13.Power on/off
14.Bluetooth antenna

Image: Visual representation of the various high-resolution music formats supported by the XA-02, including MQA 8X, DSD256, PCM 32Bit/384kHz, and DXD 32Bit/384kHz.

3. PARTS AND CONTROLS

Front Panel

1. **6.35mm Headphone Out:** Standard headphone output.

2. **4.4mm Balanced Headphone Out:** Balanced headphone output for enhanced audio quality.

3. **Screen:** 1.3-inch OLED display for status and settings.

4. **Menu Key:** Press to enter or exit menu settings. Rotate the volume knob to select menu items, and press the volume knob to confirm.

5. **Pairing (Bluetooth) Button:** Long press for 3 seconds to force the device into Bluetooth pairing state.

6. **Multi-function Knob:**

   - Turn clockwise to increase volume; turn counter-clockwise to decrease volume.
   - Short press to change input channel: USB In, Coaxial, Optical, and Bluetooth In.
   - In menu settings, press this button to confirm selection.

   Backlight Color Indication:

Volume	Color
0-20	Dark Cyan
21-45	Bright Cyan
46-75	Light Red
76-99	Deep Red

Rear Panel

7. **AUX Out:** Analog audio output from the DAC.

8. **Coaxial IN:** Coaxial digital audio input.

9. **Optical IN:** Optical digital audio input.

10. **USB IN:** USB audio input.

11. **Upgrade Interface:** For firmware updates.

12. **Power Input:** Connect to AC100-240V power supply.

13. **Power On/Off:** Main power switch.

14. **Bluetooth Antenna:** Connection point for the Bluetooth antenna.

Image: Front panel of the XA-02 with numbered labels indicating the 6.35mm headphone out, 4.4mm balanced headphone out, screen, menu key, pairing button, and multi-function knob.

Image: Rear panel of the XA-02 with numbered labels indicating AUX Out, Coaxial IN, Optical IN, USB IN, Upgrade interface, Power input, Power on/off switch, and Bluetooth antenna connection.

4. SETUP

1. **Power Connection:** Connect the power cable to the XA-02's power input (AC100-240V) and then to a power outlet. Ensure the power switch on the rear panel is in the 'OFF' position before connecting.

2. **Bluetooth Antenna Installation:** Screw the provided Bluetooth antenna into the designated port on the rear panel.

3. **Power On:** Press the power switch on the rear panel to the 'ON' position. The OLED screen will light up.

Video: Demonstrates the initial setup of the xDuoo XA-02, including connecting the power cable, installing the Bluetooth antenna, and powering on the device.

5. OPERATING INSTRUCTIONS

1. **Changing Input Channel:** Short press the multi-function knob to cycle through available input channels: USB, Coaxial, Optical, and Bluetooth. The selected input will be displayed on the OLED screen.

2. **Bluetooth Pairing:** If you select Bluetooth input, long press the pairing (Bluetooth) button for 3 seconds to enter pairing mode. On your mobile device or computer, search for 'XA-02' in the Bluetooth settings and connect.

3. **Volume Adjustment:** Rotate the multi-function knob clockwise to increase the volume and counter-clockwise to decrease it. The volume level (0-99) and corresponding backlight color will be displayed on the screen.

4. **Menu Settings:** Press the menu key to enter the menu settings. Rotate the multi-function knob to navigate through options like FILTER (FIR1-FIR8), GAIN (G=H for High, G=L for Low), and BASS (ON/OFF). Press the multi-function knob to confirm your selection.

5. **Connecting Headphones:** Connect your headphones to either the 6.35mm or 4.4mm balanced headphone output on the front panel.
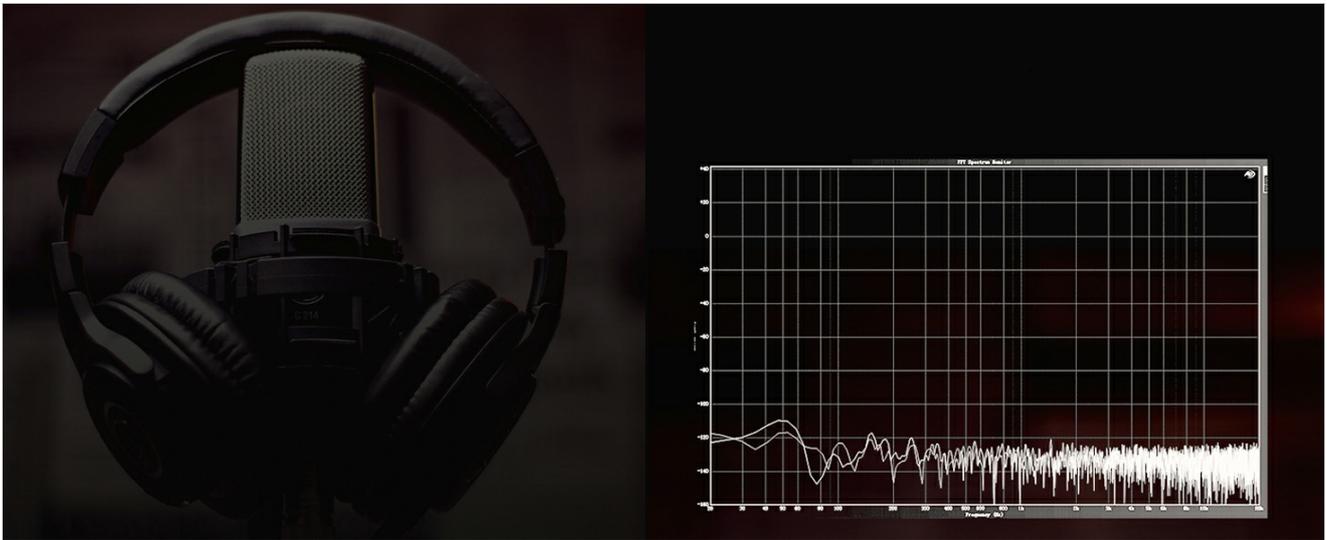
Image: Close-up of the XA-02's digital volume knob and OLED display, showing volume level and input status. The backlight color changes with volume.

6. CONNECTING TO AUDIO DEVICES

1. **USB Input:** Set the input to 'USB IN' on the screen. Use a USB cable to connect the XA-02 to an Apple, Windows, or Linux computer, mobile phone, tablet, or HiFi player. Connect your headphones to the XA-02. Ensure the XA-02 is set as the audio output device on your computer/device.

2. **Coaxial/Optical Input:** Set the input to 'COAXIAL' or 'OPTICAL' on the screen. Use a Coaxial or Optical cable to connect the XA-02 to a player or CD player with Coaxial/Optical audio output. Connect your headphones to the XA-02.

3. **Bluetooth Input:** Set the input to 'Bluetooth' on the screen. Connect your Bluetooth-enabled phone or computer to the XA-02 via Bluetooth. Connect your headphones to the XA-02.

4. **AUX Output:** When using USB, Coaxial, Optical, or Bluetooth input, the AUX OUT can be connected to other Hi-Fi amplifiers or active speakers for further audio routing.

Note: To avoid noise, do not tie the audio cable together with the power cable.

Troubleshooting No Sound (Computer Connection): If there is no sound when connecting to a computer, check the PC audio output device settings. Click the PC start menu and select: Control Panel → Hardware and Sound → Hardware and Sound → Sound. After the computer displays an interface, click the <Play> option, and then select "xDuoo USB Audio" to set it as the default playback device.
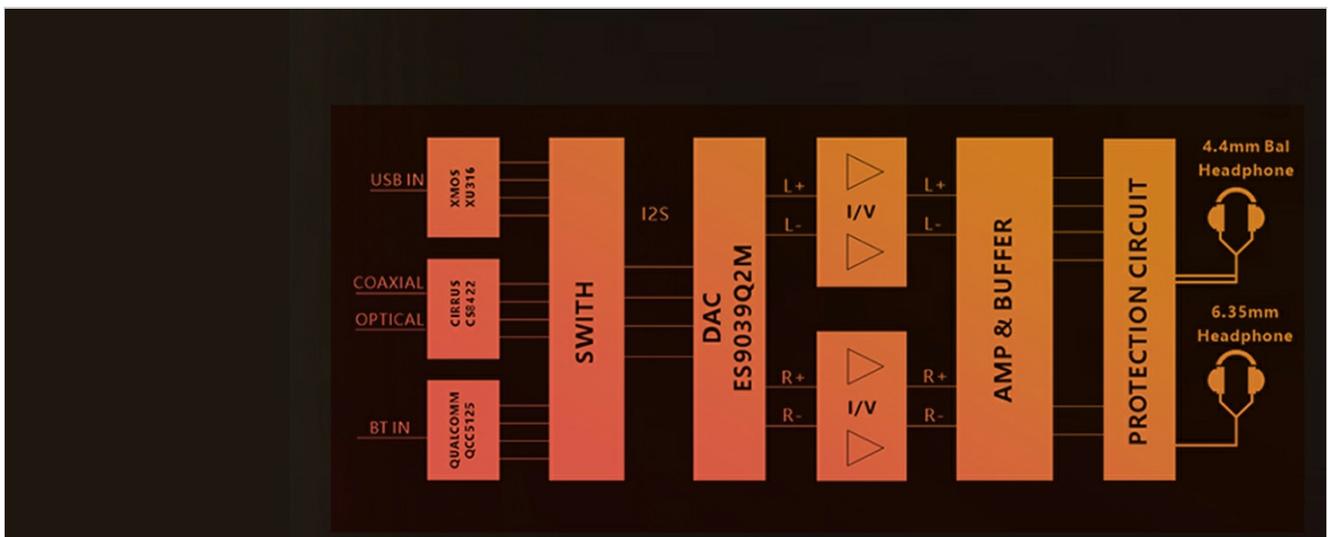
Image: Diagram illustrating various connection methods for the XA-02, including USB, Coaxial, Optical, and Bluetooth inputs, and AUX output to speakers.

7. ACCESSORIES LIST

The following items are included with your xDuoo XA-02:

- xDuoo XA-02 Unit
- Bluetooth Antenna
- 6.35 to 3.5 Converter
- Type-C USB Cable
- Power Cable
- User Manual
- Warranty Card

Video: An unboxing video of the xDuoo XA-02, showing all included accessories.

8. SPECIFICATIONS

Parameter	Value
Power Supply	AC 100-240V
Screen	1.3 inch OLED screen
Compliant OS	Windows, Linux, Mac OS X, iOS, Android system
Bluetooth Support Formats	SBC, AAC, aptX, aptX LL, aptX HD, LDAC
Suitable Headphone Impedance	16Ω–600Ω
Size	20 × 17.5 × 4.7 cm
Weight	0.9KG

Sampling Rate Support

- **USB IN:** PCM: 16-32Bit/44.1K-384KHz; DSD: DSD64-256; MQA: 44.1K-384KHz.
- **COA/OPT IN:** PCM: 16-24Bit/44.1-192KHz; DSD: DSD64(DOP).

6.35mm Headphone Output Parameters

- Output Power: 910mW (32Ω load)
- Frequency Response: 20Hz-60KHz (±0.5dB)
- Crosstalk: ≥71dB
- SNR: 119dB (A Weight)
- THD+N: 0.002%

4.4mm Balanced Headphone Output Parameters

- Output Power: 2000mW (32Ω load)

- Frequency Response: 20Hz-60KHz (±0.5dB)

- Crosstalk: ≥118dB

- SNR: 121dB (A Weight)

- THD+N: 0.0004%

AUX OUT Parameters

- Output level: 2.6Vrms

- Frequency Response: 20Hz-60KHz (±0.2dB)

- Crosstalk: ≥118dB

- SNR: 121dB (A Weight)

- THD+N: ≤0.0004%

9. MAINTENANCE INSTRUCTION AND WARRANTY TERMS

Maintenance Instruction

1. Do not place the unit under direct sunlight or near heating equipment.

2. Do not place the machine in a high temperature or dusty place, or allow any items with water to be placed on it.

3. Do not use chemical solvents to clean the machine. Otherwise, it may damage the surface coating. Please use a soft, dry cloth to wipe it.

4. Turn the unit power off when not using it for a long time.

5. Do not attempt to repair the unit by yourself. If there are any problems, you should send it to local dealers for repair.

Warranty Information

Our products come with 12-months free warranty services from the date of sale. If the warranty period is expired, our company will charge costs depending on the product fault conditions. Accessories are not covered under warranty.

10. TROUBLESHOOTING

If you encounter issues with your xDuoo XA-02, please refer to the following common troubleshooting steps:

- **No Power:** Ensure the power cable is securely connected to both the unit and the power outlet, and that the power switch on the rear panel is in the 'ON' position.

- **No Sound:**
  - Check if the correct input source (USB, Coaxial, Optical, Bluetooth) is selected on the XA-02.
  - Verify that your headphones are properly connected to either the 6.35mm or 4.4mm output.
  - Increase the volume using the multi-function knob.
  - If using a computer, ensure the XA-02 is selected as the default audio output device (refer to 'Connecting to Audio Devices' section for detailed steps).
  - If using Bluetooth, ensure the device is properly paired and connected.

- **Distorted Sound:**
  - Check the audio source for quality issues.
  - Ensure audio cables are securely connected and not damaged.
  - Try a different audio cable or input source.
  - Reduce the volume to see if distortion persists.

- **Bluetooth Connection Issues:**
    - Ensure the Bluetooth antenna is securely installed.
    - Make sure the XA-02 is in Bluetooth pairing mode (long press the pairing button).
    - Ensure your source device's Bluetooth is enabled and within range.
    - Try unpairing and re-pairing the device.

- **Unit Not Responding:** Try turning the unit off and on again. If the problem persists, disconnect the power for a few minutes and then reconnect.

If these steps do not resolve the issue, please contact your local dealer or customer support for further assistance.