OPPO®

HEADPHONE AMPLIFIER HA-1
USER MANUAL
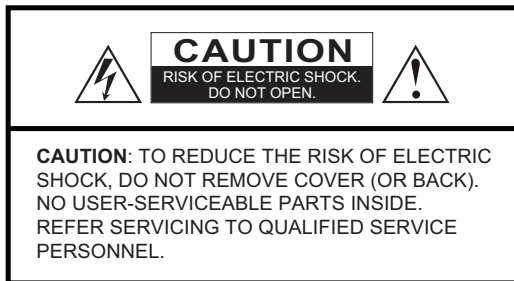

Made for
iPod iPhone iPad
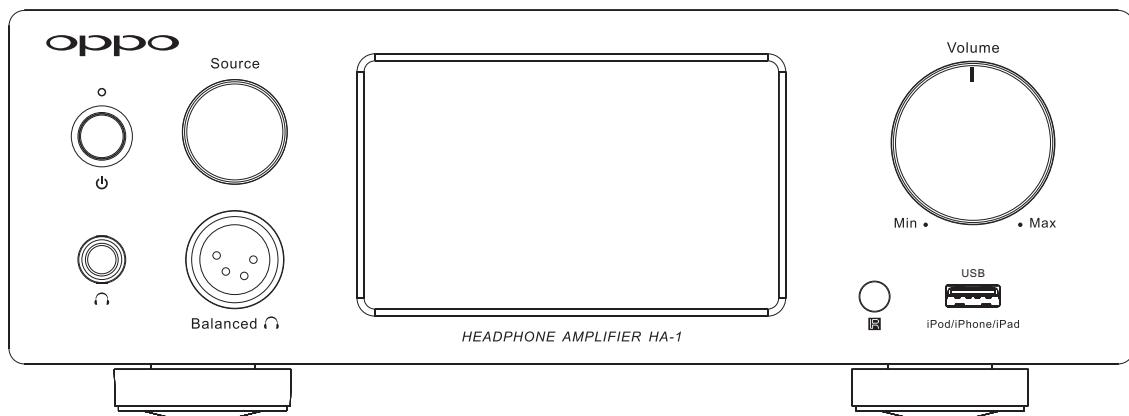
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Important Information

CAUTION
RISK OF ELECTRIC SHOCK.
DO NOT OPEN.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instruction in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY. THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES SHALL BE PLACED ON THE APPARATUS.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this device near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatuses (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plug, receptacle, and the point where it exits from the apparatus.
11. Only use attachments and accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING: DO NOT INGEST BATTERY, CHEMICAL BURN HAZARD.

The remote control supplied with this product contains a coin/button cell battery. If the coin/ button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death. Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type. Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

WARNING: The mains plug is used as disconnect device. The disconnect device shall remain readily operable.

Precautions

- Before connecting the AC power cord to the appliance, make sure the voltage designation of the appliance corresponds to the local electrical supply. If you are unsure of your power supply, contact your local power company. The acceptable power input range is AC 110 V - 120 V ~ / 220 V - 240 V ~, 50 / 60 Hz.
- The appliance with CLASS I construction should be connected to a mains socket with a protective earth connection.
- The device receives power from the AC power source as long as it is connected to the wall outlet, even if the device itself has been turned off.

- Unplug the power cord if you are not going to use the product for an extended period of time.
- Hold the power plug when unplugging. Do not pull on the cord.
- To ensure proper ventilation around this product, do not place this product on a sofa, bed, or rug. When installing this product on a wall or bookshelf, make sure to provide appropriate space. We recommend leaving 4 in (10 cm) of free space at the top, the sides, and the rear.
- High temperature will lead to abnormal operation of this unit. Do not expose this unit to direct sunlight or near other heat sources.

FCC Statement (For U.S. Customers)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, 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 receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.
- This device complies with FCC radiation exposure limits set forth for an uncontrolled environment.

CAUTION: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada Statement (For Canadian Customers)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de rf.

Legal Notice

"Made for iPod", "Made for iPhone", and "Made for iPad" mean that an electronic accessory has been designed to connect specifically to iPod®, iPhone®, or iPad®, respectively, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPod, iPhone, or iPad may affect wireless performance.

iPad, iPhone, iPod and iPod touch® are trademarks of Apple Inc., registered in the U.S. and other countries.

Compatible iPod/iPhone/iPad Models

- USB works with iPhone 5S, iPhone 5C, iPhone 5, iPhone 4S, iPad (4th generation), iPad mini, iPod touch (5th generation).
- Bluetooth technology works with iPhone 5S, iPhone 5C, iPhone 5, iPhone 4S, iPad (4th generation), iPad mini, and iPod touch (5th generation).

Introduction

The HA-1 Headphone Amplifier draws upon the proven circuit design of the BDP-95 and BDP-105 Blu-ray Disc players. We designed the HA-1 headphone amplifier using the same universal approach we take with our Blu-ray players, so apart from being a high performance headphone amplifier, the HA-1 functions as an asynchronous USB DAC, stereo pre-amplifier, digital audio dock for mobile devices, and a Bluetooth audio transport.

The HA-1's analog audio section is a fully balanced, differential design with a Class A power amplifier circuit that is capable of driving the most difficult of headphones. Throughout the design process, our emphasis was in keeping the audio signal in the analog domain once it leaves the DAC. The HA-1 is anchored by a robust toroidal power transformer with linear power regulators and filters with custom made capacitors to ensure the headphone amplifier has a clean power source with plenty or energy reserves. Users have the choice between using a 4-pin balanced XLR or traditional quarter-inch (6.35 mm) headphone connection.

The power amplification section uses hand-picked and paired discrete components to ensure symmetry. The volume control knob is motor-driven and can be adjusted either by hand or via remote control while keeping the audio in the analog domain. Line level RCA and balanced XLR analog inputs and outputs are available, and built-in monitoring and protection circuitry guards against short-circuiting, overloading, and DC offset.

The HA-1 is ideally suited for high-resolution digital audio. It includes coaxial, optical, balanced AES/EBU digital inputs as well as an asynchronous USB DAC controlled by a 16-core XMOS chipset that supports both PCM and DSD formats. The same ESS 9018 Sabre^{32} Reference DAC and output driving state used in our audiophile Blu-ray players ensures high resolution performance with extremely low noise and distortion. You can easily connect the HA-1 to a computer via USB and enjoy jitter-free music using your preferred playback software. For added convenience, Bluetooth connectivity with the high quality aptX codec is also available.

Aesthetically, the HA-1 features a classic design with contemporary elements. It is housed in a thick aluminum chassis, and its familiar volume and source selection knobs are complemented by a high-quality TFT LCD display providing convenient access to the HA-1's intuitive user interface. Depending on your preferences or the mood of the music being played, you can choose between a classic VU meter, a modern spectrum display, or a simple informational summary to be displayed on the screen. A supplied IR remote and smartphone application via Bluetooth provide additional control and convenience.

The OPPO HA-1 Headphone Amplifier allows you to fully realize the potential of your high-end headphones. The HA-1 is a perfect match for OPPO Planar Magnetic headphones, and its power and versatility allow it to meet the demands of the most discerning music lover.

Accessories

Ensure that the following accessories have been included with your OPPO HA-1 Headphone Amplifier:

 User Manual

 Power Cable , about 4.5 feet

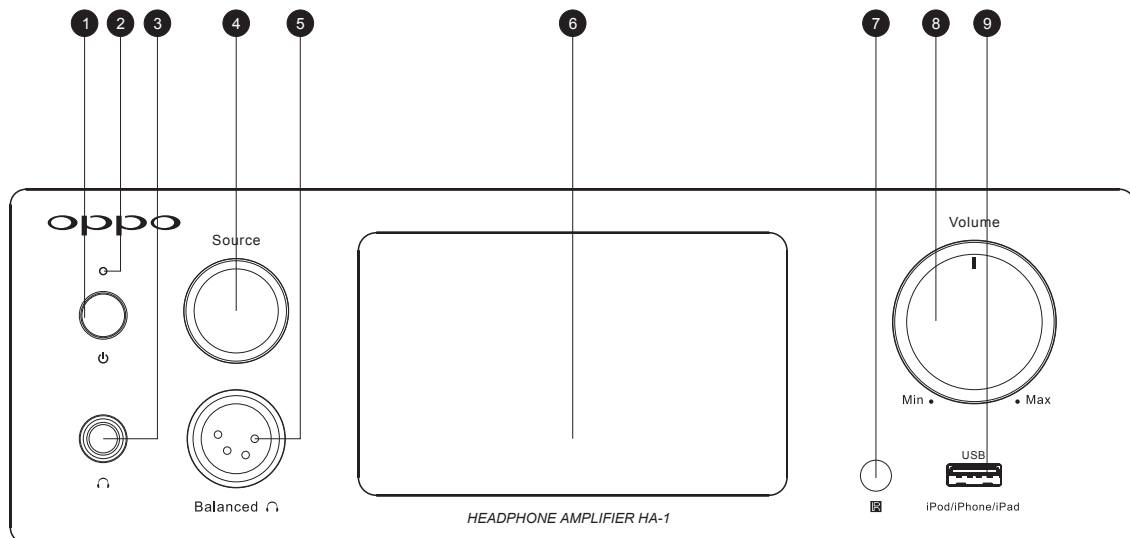 Remote Control with Battery

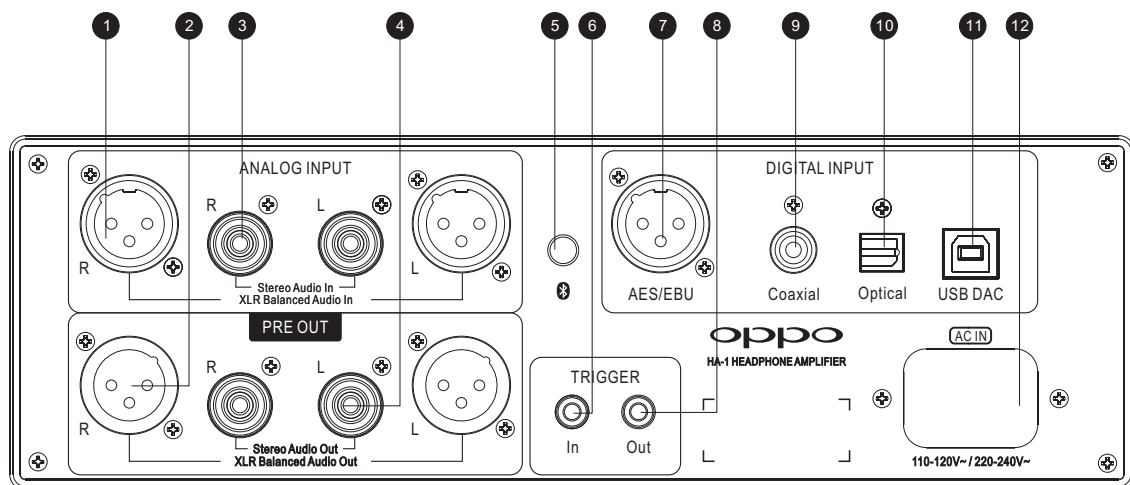 Bluetooth Antenna

 3.5 mm to 6.35 mm Headphone Adapter

Installation

Front Panel Controls

1. Power Button
2. Power Status Indicator
3. 6.35 mm Headphone Jack
4. Source Selector Knob
5. Balanced Headphone Jack
6. Front Panel Display Window
7. IR Sensor Window
8. Volume Knob
9. Mobile USB Audio Input

Back Panel Connectors

1. XLR Balanced Audio Input
2. Pre-Amplifier Output (XLR)
3. RCA Stereo Audio Input
4. Pre-Amplifier Output (RCA)
5. Bluetooth Antenna
6. Trigger Input
7. AES / EBU Digital Audio Input
8. Trigger Output
9. Coaxial Digital Audio Input
10. Optical Digital Audio Input
11. USB (Type B) Audio Input
12. AC Inlet

Remote Control

Remote Control Buttons
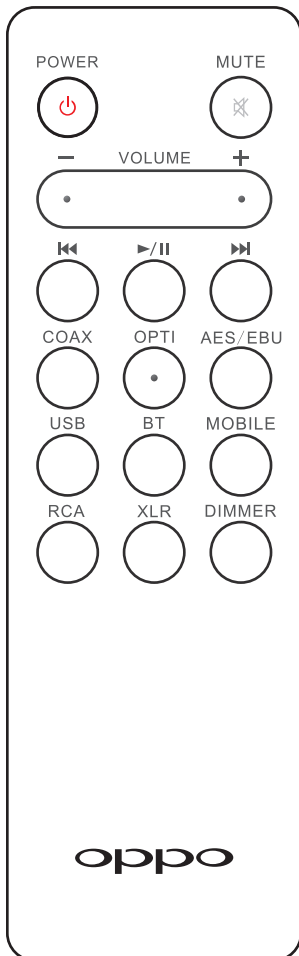
POWER: Toggle between STANDBY and ON
MUTE: Mute audio output
VOLUME +/-: Increase and decrease volume
PREV: Skip to previous track
PLAY / PAUSE: Start or Pause playback
NEXT: Skip to next track
COAX: Switch to Coaxial Digital Audio Input
OPTI: Switch to Optical Digital Audio Input
AES/EBU: Switch to AES/EBU Digital Audio Input
USB: Switch to USB (Type B) Audio Input
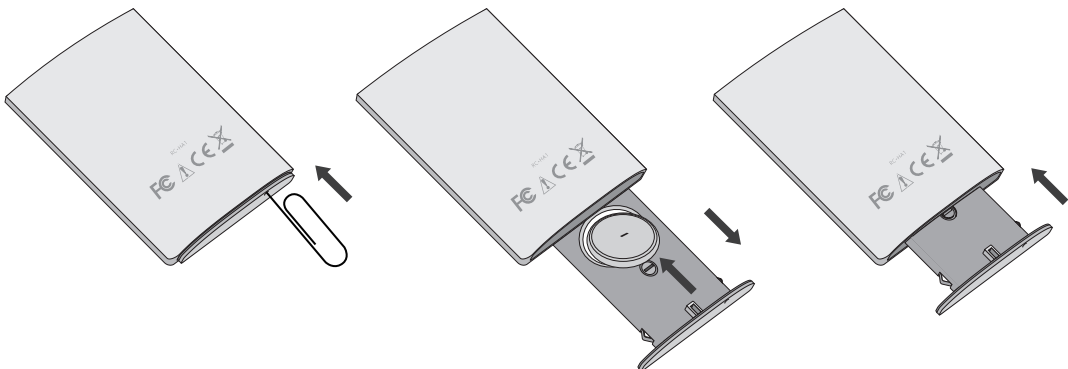**BT**: Switch to Bluetooth Audio Input
MOBILE: Switch to Mobile USB Audio Input
RCA: Switch to RCA Stereo Audio Input
XLR: Switch to XLR Balanced Audio Input
DIMMER: Dim the front panel display

Battery Installation

The remote control comes with the battery pre-installed. When the original battery runs out, replace it with a new CR2032 button battery. To replace the battery, insert a straightened paper clip into the battery tray release hole at the

end of the remote control and push. The battery tray will pop slightly open. Pull out the battery tray with the remote control buttons facing down. Pay attention to the battery orientation while taking out the old battery. Place a new battery into the tray following the correct orientation by matching the polarity marks on the battery and the tray. The battery's positive side (the flat end that has a + sign on it) should face down and sink into the tray, while its negative side (the rounded end) should face up. Slide the battery tray back into the remote until it clicks. Test the remote to make sure it works well after the battery replacement. Dispose of the used battery immediately and responsibly.

LITHIUM COIN CELL SAFETY NOTICE:

Keep lithium coin batteries out of the reach of small children; coin cell batteries can be accidentally ingested. If ingested, these batteries may leak harmful contents causing chemical burns, perforation of soft tissue, and in severe cases may cause death. Lithium coin batteries must be removed immediately if swallowed. Seek medical attention immediately. If you or your doctor suspects that a battery has been ingested-for assistance in the US call the NATIONAL BATTERY INGESTION HOTLINE any time at (202) 625-3333; in Canada call (416) 813-5900.

Using the Remote Control
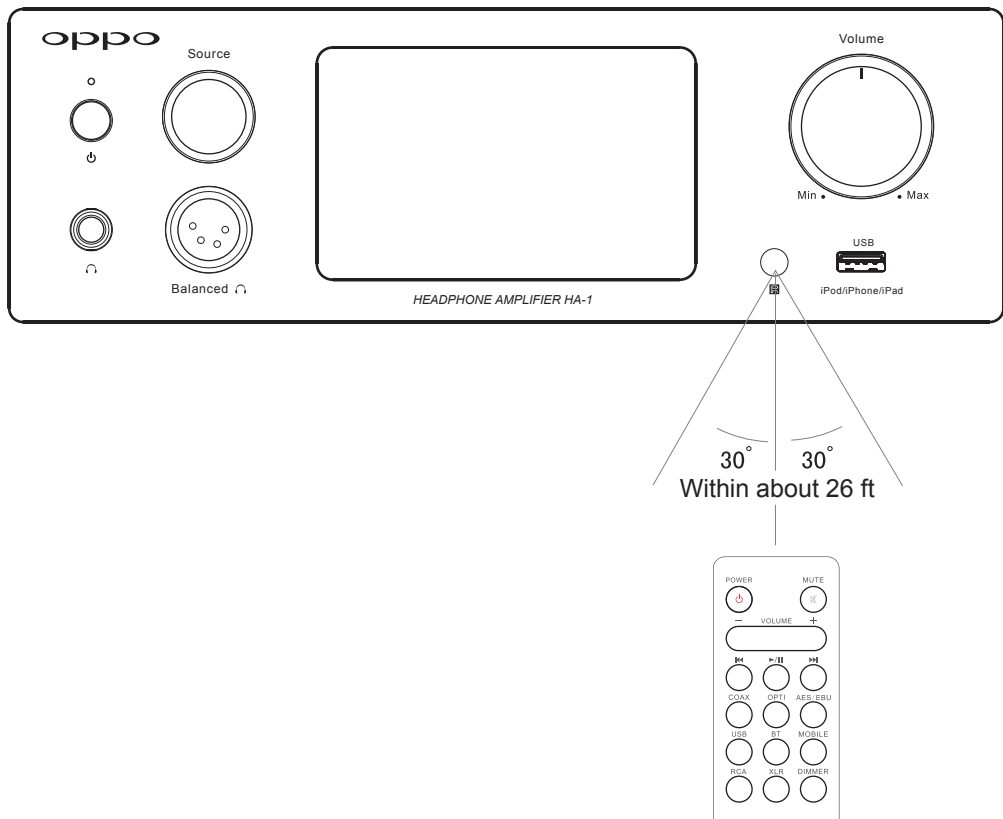
When using the remote control, the **IR Emitter** on the front of the remote should be pointed towards the **IR Sensor Window** on the HA-1 within a ±30° angle and a range of about 26 ft (8 meters).

Headphone Output Connection

You can connect your headphones to the OPPO HA-1 using either a standard 6.35 mm connector or a 4-pin XLR balanced connector. If your headphones terminate with a 3.5 mm connector, you can use the supplied **3.5 mm to 6.35 mm Headphone Adapter** to connect the headphones to the HA-1.

For optimal sound quality, you can adjust the **Headphone Gain** between the **Normal** and **High** settings in order to properly drive headphones that are very sensitive or require additional power. Please refer to the ***Headphone Gain Selection*** section in the ***Advanced Operations*** chapter of this manual for details.

6.35 mm   or   4-pin XLR
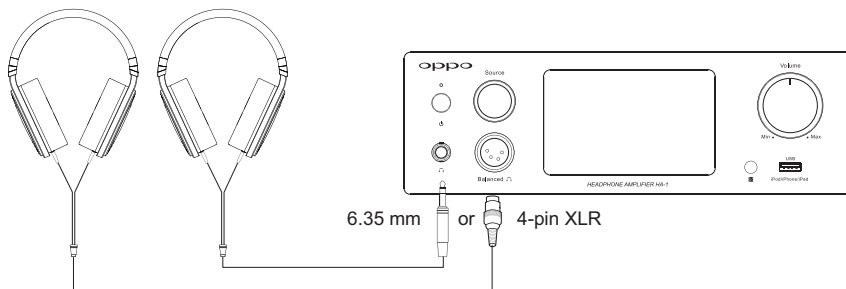
Notes:

- The **6.35 mm Headphone Jack** and **Balanced Headphone Jack** cannot be used simultaneously. When a 6.35 mm connector is plugged in, the **Balanced Headphone Jack** is muted.
- When plugging and unplugging the 6.35 mm connector, please completely insert or pull out the connector in a quick motion. Due to the physical shape of the 6.35 mm connector, keeping the connector plugged in half way causes a short circuit between the left and right output channels, and may trigger the short-circuit protection feature of the HA-1.

Using the HA-1 as a Pre-Amplifier or DAC

The OPPO HA-1 can be used as a pre-amplifier or a Digital-to-Analog Converter (DAC) by connecting its **Pre-amplifier Output** (PRE OUT) to a power amplifier or a pair of active speakers. The HA-1 offers both **RCA** and **XLR Balanced** jacks. The output level is controlled by the **Volume Knob** or remote. The output is not muted when a pair of headphones is plugged in. It is muted when the remote **MUTE** button is pressed.
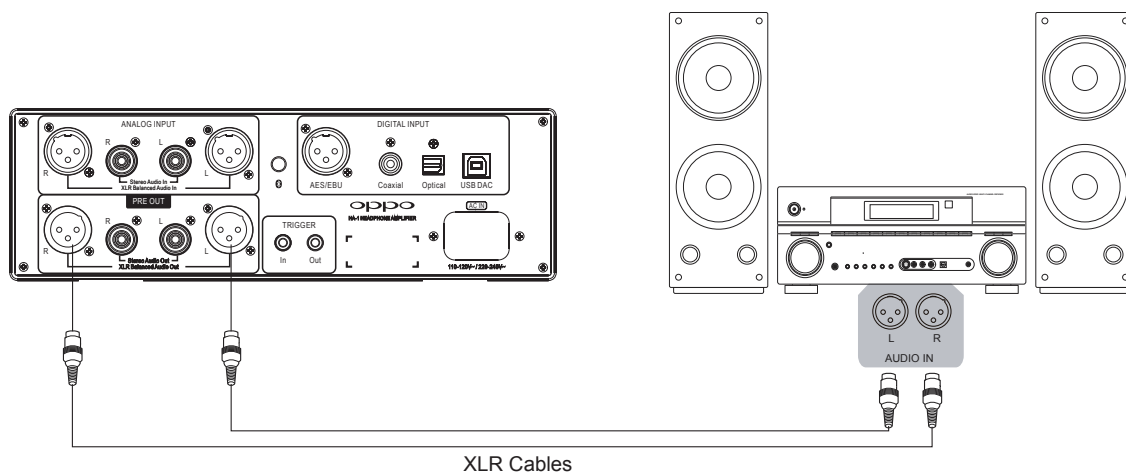
RCA Stereo Audio Outputs

You can connect the HA-1 to a power amplifier or a pair of active speakers with RCA analog inputs using RCA audio interconnect cables.

Audio Interconnect Cables
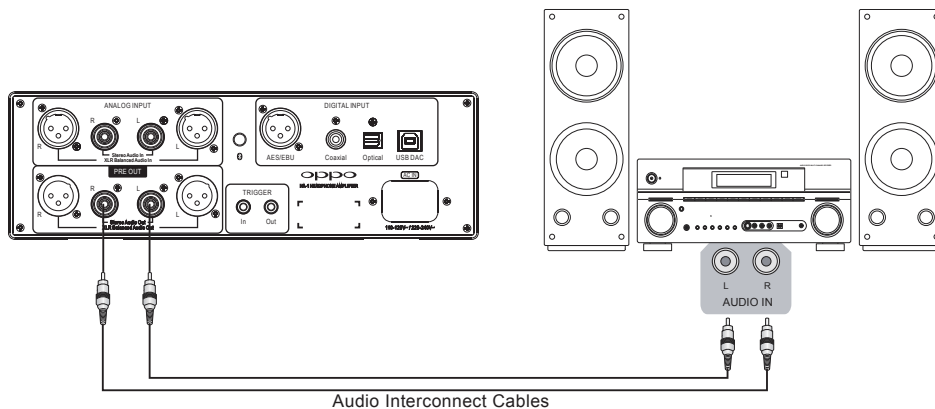
XLR Balanced Audio Outputs

You can connect the HA-1 to a power amplifier or a pair of active speakers with XLR balanced inputs using XLR cables.

XLR Cables

Triggers

When used as pre-amplifier, the **Trigger Output** of the HA-1 can be connected to the trigger input of a stereo power amplifier using a 3.5 mm mono-to-mono mini-jack cable. When the HA-1 is turned on, the **Trigger Output** will supply a +12 V voltage signal so the connected power amplifier can be turned on automatically. The **Trigger Output** can supply up to 100 mA current.

The **Trigger Input** of the HA-1 can be connected to the trigger output of a source device or surround sound processor. This allows the HA-1 to be turned on and off together with the connected device.

The use of **Trigger Output** or **Trigger Input** is not required. You can always manually turn on or off the HA-1 using the **POWER** button on the front panel or remote control.

Input Signal Connections

The OPPO HA-1 supports multiple analog and digital input connections. Depending on your intended usage, please connect one or more input sources to the HA-1.

RCA Stereo Audio Inputs

You can connect an audio device with RCA analog outputs into the HA-1 using a pair of RCA cables. The analog signal will be amplified and sent to the headphone and line level outputs. This input source is labeled **RCA** on both the **Source Selection** screen and the remote control.
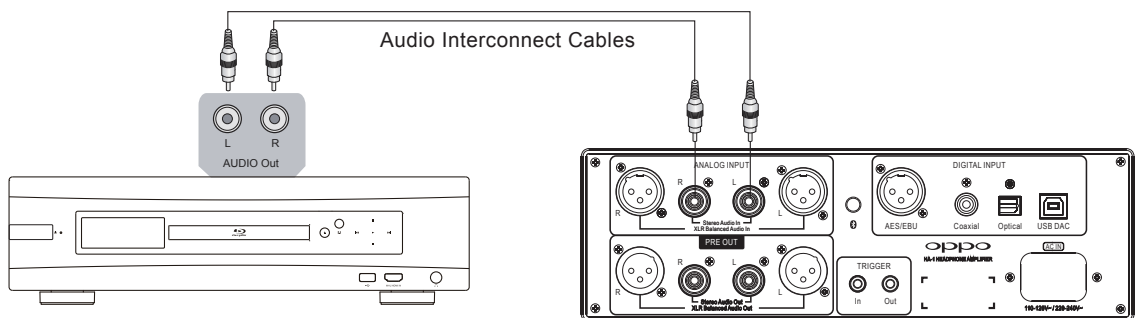

XLR Balanced Audio Inputs

You can connect an audio device with XLR balanced outputs into the HA-1 using XLR balanced cables. The analog signal will be amplified and sent to the headphone and line level outputs. This input source is labeled **XLR** on both the **Source Selection** screen and the remote control.
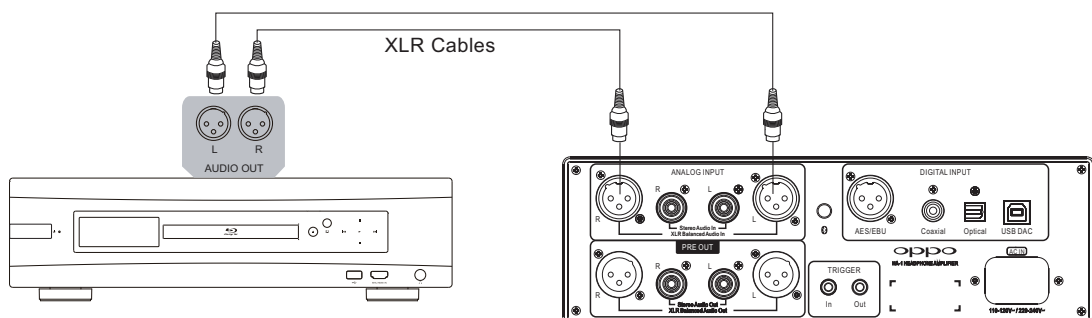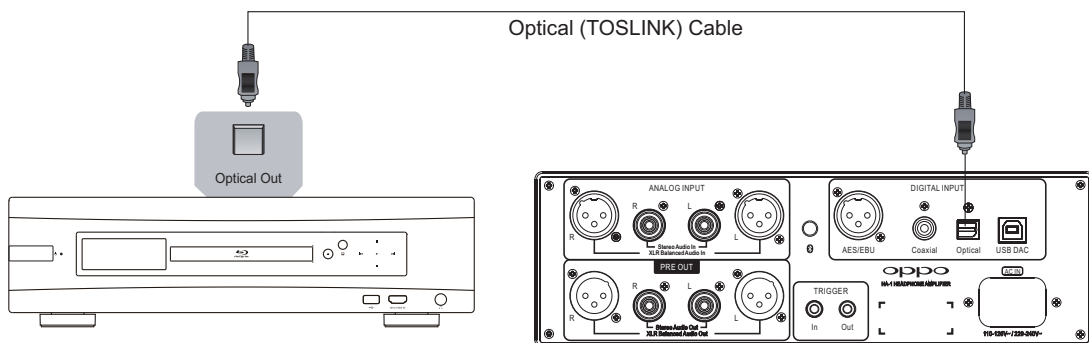
Coaxial Digital Audio Input

You can connect a device with a coaxial digital output into the **Coaxial Digital Audio Input** of the HA-1 using a coaxial digital (75 ohm) cable. The digital signal will be converted by the internal DAC and sent to the headphone and line level outputs. This input source is labeled **COAXIAL** on the **Source Selection** screen and **COAX** on the remote control.

Coaxial Digital Cable
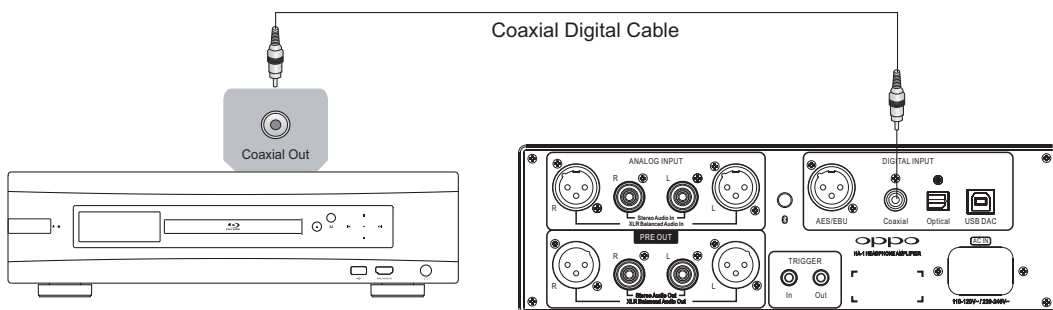
Optical Digital Audio Input

You can connect a device with an optical digital output into the **Optical Digital Audio Input** of the HA-1 using an optical cable (also known as a TOSLINK cable). The digital signal will be converted by the internal DAC and sent to the headphone and line level outputs. This input source is labeled **OPTICAL** on the **Source Selection** screen and **OPTI** on the remote control.

Optical (TOSLINK) Cable

AES / EBU Digital Audio Input

You can connect a device with an AES / EBU digital output into the **AES / EBU Digital Audio Input** of the HA-1 using an XLR-3 (110 ohm) digital cable. The digital signal will be converted by the internal DAC and sent to the headphone and line level outputs. This input source is labeled **AES / EBU** on both the **Source Selection** screen and the remote control.

XLR-3 Digital Cable