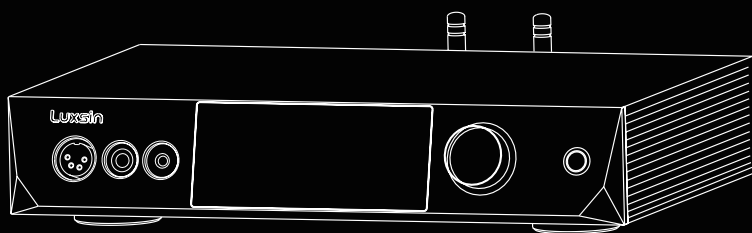


PRODUCT MANUAL

产品说明书手册

X9 DAC & Headphone Amplifier
X9 音频解码耳放一体机



Shenzhen Lesheng Acoustic Technology Co., Ltd.
深圳市乐笙声学技术有限公司

Product Introduction

Thank you for purchasing the Luxsin X9 Desktop DAC / Headphone / Power Amplifier All-in-One Unit.

The Luxsin X9 is a finely crafted, high-performance desktop DAC and headphone amplifier. It features the flagship AK4499EX DAC chip and a hardware-level AutoEQ system capable of automatically calibrating headphone frequency response, supporting over 2,500 headphone models. Equipped with the premium DSP module, it offers 24-bit audio processing and supports up to 192kHz sampling rates. The fully balanced amplifier design delivers up to 4000mV @ 32Ω output power and includes a wide range of input options, an R2R relay-controlled volume system, Wi-Fi remote control, OTA firmware updates, and HDMI ARC audio return.

The Luxsin X9 supports a variety of digital inputs including USB-B, USB-C, Coaxial, Optical, Bluetooth, HDMI eARC, and analog RCA, catering to all audiophile setup needs.

The decoding architecture features an XMOS 316 audio processor paired with dual AKM chips, supporting decoding formats up to DSD512, PCM 768kHz@32Bit, and MQA. It ensures ultra-low noise and distortion during D/A conversion, delivering exceptional audio performance.

With its AutoEQ system based on a database of over 2,500 headphone models, the X9 provides fully automated, lossless PEQ (Parametric EQ) calibration. AutoEQ is an open-source project that generates correction EQs based on headphone measurements, thanks to the contributions of its active community. Simply select your headphone model from the app to automatically load the corresponding calibration data—no manual PEQ input required. Once connected to the internet, the headphone database updates continuously, and users can share their custom EQ settings with others.

The X9 features a fully balanced headphone amplifier capable of powerful output without damaging headphones, delivering up to 4000mV @ 32Ω. With 4.4mm balanced, XLR, and 6.35mm single-ended outputs, it easily drives headphones across a wide range of impedances. Powered by 15V high-voltage rails, it delivers strong driving force and professional-level amplification to ensure every note is reproduced with precision and clarity—bringing you a true high-fidelity listening experience.

The X9 uses a full balanced signal path throughout—from DAC to decoding, R2R volume control, and headphone amplification. This differential signal design guarantees clean, accurate signal transmission. Its powerful output delivers outstanding sonic performance, while the balanced architecture reduces distortion and noise, presenting a wide dynamic range and rich tonal details for an unparalleled audio experience.

With exceptional DAC and preamp capabilities and outstanding sonic quality, the X9 delivers a pure and faithful high-fidelity music experience.

Before using this device, we recommend reading this manual carefully to fully understand and utilize all its features.

FCC Statement

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

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/TV technician for help

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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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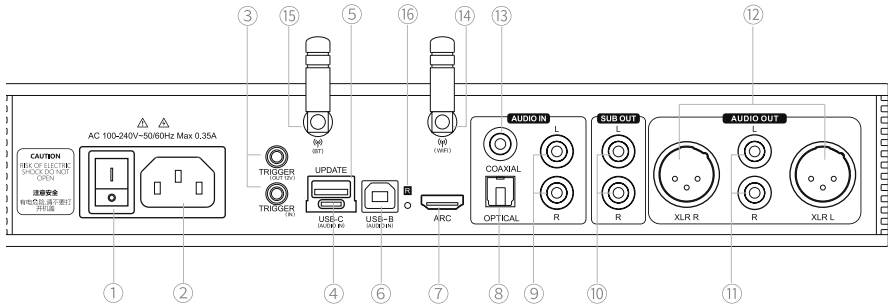
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Product Specifications

Model	Luxsin X9	Color	Silver
Weight	3729g	Display	4" LCD Touchscreen
Dimensions	206mm (L) × 300mm (W) × 65mm (H)		
DAC Chipset	AK4191EQ+AK4499EX		
Audio Processor	AKM 7739 DSP		
Op-amp	OPA1612		
Power Supply	High-quality low-noise linear & digital dual power supply		
WIFI	Wi-Fi 2.4GHz / 5GHz		
Playback and DAC Decoding	Stereo DSD512 and PCM 768kHz 32-bit		
Bluetooth	BT 5.0, supports aptX / LDAC / AAC / SBC		
USB-B / USB-C Input	Supports Windows (10, 11), Android, iOS; DSD512, PCM 768kHz 32-bit		
USB / Optical / Coaxial Input	Stereo PCM 192kHz 24-bit		
HDMI ARC	Stereo PCM 192kHz 24-bit		
Analog Input	RCA (Unbalanced), Max Gain +12dB		
Analog Outputs	XLR (Balanced), RCA (Unbalanced), Subwoofer Output		
XLR Output Audio Characteristics	Output Level (Vrms): 4.2Vrms @ 0dBFS Total Harmonic Distortion (THD+N): <0.000096% (-120.3dB) @ unweighted Signal-to-Noise Ratio(SNR) @No-wt: >128dB Frequency Response: 20Hz~20KHz (±0.25dB) Dynamic Range(DNR) @No-wt: > 128dB Channel Crosstalk: >-113dB		
RCA Output Characteristics	Output Level: 2.1Vrms @ 0dBFS Total Harmonic Distortion (THD+N): <0.00010% (-119dB A-wt) Signal-to-Noise Ratio (SNR): >125dB Dynamic Range (DNR): >128dB Frequency Response: 20Hz~20kHz (±0.25dB) Crosstalk: -123dB @ 1kHz Channel Crosstalk: >-121dB		
Headphone Output Audio Characteristics	Output Level (Vrms): 8-16Vrms@0dBFS Total Harmonic Distortion (THD+N): <0.00010% (-119dB) @ unweighted Signal-to-Noise Ratio (SNR) @No-wt: >128dB Frequency Response: 20Hz~20KHz (±0.25dB) Dynamic Range(DNR)@No-wt: > 128dB		
Control mode	Touch screen, infrared remote control, mobile app (supporting Android and iOS)		
Power supply	AC 110~240V 50/60Hz		
Rated Power	25W		
Included Item	Power cable ×1, remote control ×1, USB-B cable×1, Type-C OTG cable×1, user manual ×1, 3.5mm to 1/4" adapter×1.		

Hardware Overview

Rear Panel

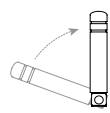


Interface Descriptions:

- ① Power Switch
- ② Power Socket 100-240V~ 50/60Hz, Max 0.35A
- ③ 12V Trigger Input Used to connect with a power amplifier to enable linked power-on/off control.
12V Trigger Output Outputs 0V when powered off. Used to connect to a streamers to enable linked power-on/off control.
- ④ USB Type-C OTG For connecting to mobile phones (requires OTG cable)
- ⑤ USB-A Port For firmware updates only
- ⑥ USB-B Audio Input Connects to a computer or digital streamer with USB audio output
- ⑦ HDMI ARC Connects to TVs, projectors, or other display devices that support HDMI ARC
- ⑧ Optical Input For connecting to CD players, set-top boxes, or turntable devices
- ⑨ RCA Input For analog signal input from CD players, set-top boxes, or turntable devices
- ⑩ SUB Out (Analog Output for Subwoofer)
- ⑪ RCA Line Out Connects to power amplifiers or active speakers
- ⑫ XLR Balanced Output Connects to power amplifiers or active speakers
- ⑬ Coaxial Input For connecting to decoders or preamps
- ⑭ Wi-Fi Antenna For wireless network connection
- ⑮ Bluetooth Antenna For Bluetooth connection
- ⑯ Reset Insert a USB drive and press the reset button while powering on. When the Luxsin logo appears for 2 seconds, release the button to begin the upgrade process

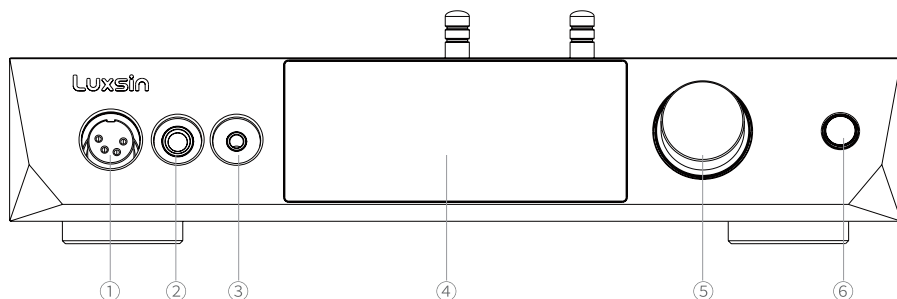
Notes:

- *Subwoofer output is unavailable during DSD playback.
- *Subwoofer output is also unavailable during DSD playback and when HP-EQ is in bypass mode.
- *Before use, please rotate all antennas upward for optimal signal reception.



Antenna Orientation Diagram

Front Panel



Interface Descriptions:

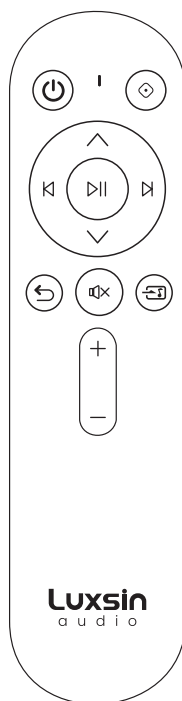
- ① XLR4 Balanced Headphone Output
- ② 6.35mm Headphone Output
- ③ 4.4mm Balanced Headphone Output
- ④ LED Display Screen (Touch-sensitive buttons on screen)
- ⑤ Rotary Knob – Adjusts volume
- ⑥ Power Button – Long press (2 seconds) to power off /
Single press to mute or power on

Remote Control Functions:

- ⏻ Power On/Off
- ⬢ Custom Button
- ⏮ Previous Track
- ⏸ Pause
- ⏭ Next Track
- ⬆ Up
- ⬇ Down
- ↶ Return
- 🔇 Mute
- 📶 Input Source
- + Volume +
- Volume -

* This remote control is compatible only with Luxsin series products.

* ⏻ The power key supports IR (Infrared) power control only.



Basic Operation

Main Interface Overview



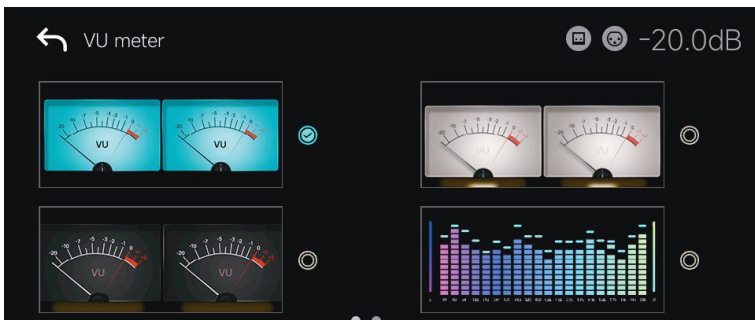
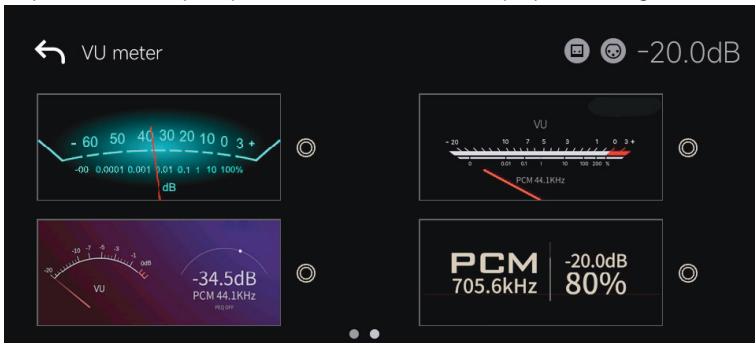
Top Right Status Bar: Displays input/output connection status, active device, and current volume level.

Top Left Status Bar: Displays the current audio playback format (e.g., PCM).

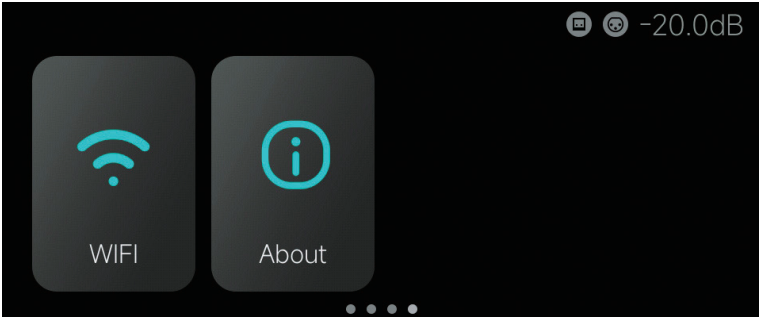
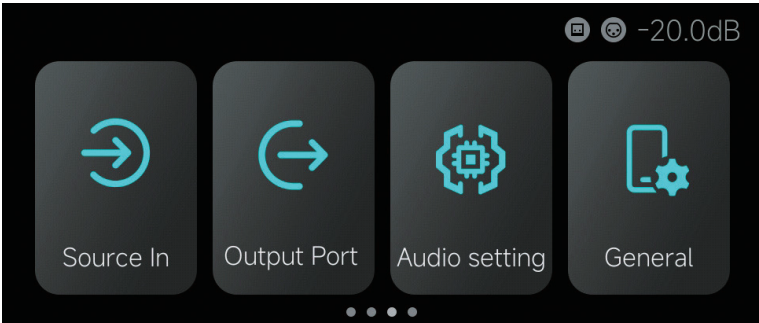
Swipe Up/Down: Swipe vertically on the screen to switch between different VU meter displays.

Swipe Left/Right: Swipe horizontally to navigate to other functional display areas.

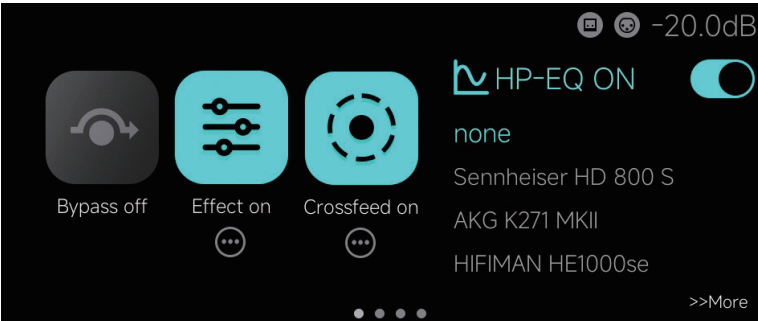
Long Press (2 seconds): Long-press anywhere on the screen for 2 seconds to access additional VU meter styles and select your preferred main interface display. (See image below)



Main Function Area: Input Source,Output Port,Audio Settings,General Settings, Wi-Fi,About (navigate by swiping left or right)



Sound Effects Control



The device is equipped with a DSP, allowing users to fine-tune the sound based on personal preferences. You can adjust the parametric EQ, sound effects (including soundstage width, various musical styles, subwoofer), and crossfeed.

It also displays input/output connections, network status, and volume level. You can directly select your headphone model listed under HP-EQ

Bypass On/Off: Master switch to enable or disable all audio effects.

Effects: Tap to enable/disable; click "... " to enter detailed settings for soundstage width, music style, and subwoofer options.

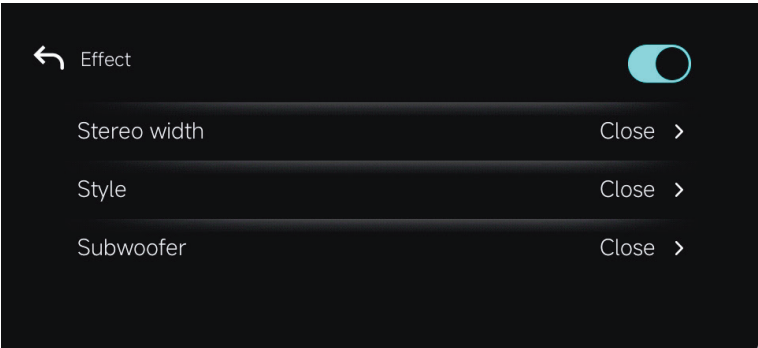
Crossfeed: Tap to enable/disable; click "... " to access advanced crossfeed settings.

HP-EQ On/Off: Toggle headphone-specific EQ on/off. Click to enter “More” options for headphone model and settings.

Effects:

- Soundstage Width:

Adjusts the perceived spatial width when listening to music. The wider the field (0 to 100), the more immersive the experience.



- **Style Presets:**

Choose from a variety of EQ presets tailored to musical genres or moods:

Classical, Dance, Pop, Reggae, Live, Rock, Soft, Electronic, Club, All Bass, All Treble, Headphone, Hall, Party, Ska, Chill

- **Subwoofer Settings:**

Includes parameters such as cutoff frequency, roll-off slope, gain, and output mode, significantly enhancing subwoofer performance and optimizing overall listening experience.

HP-EQ Detail

HP-EQ only processes PCM signals up to 192kHz. PCM signals above 192kHz will be sent directly to the DAC.

For more detailed HP-EQ settings, please refer to the “HP-EQ Guide” by scanning the QR code below.



HP-EQ

Input Sources



Luxsin X9 supports a variety of input options, including:

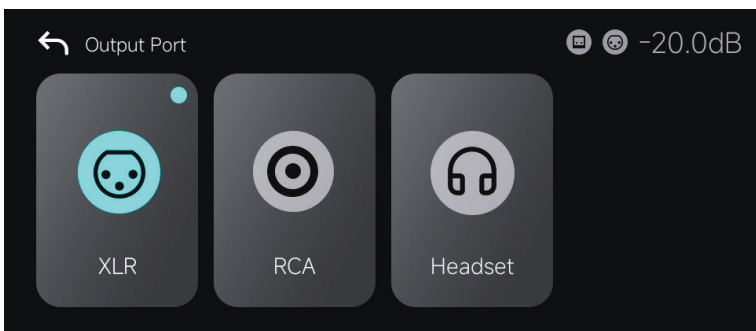
- USB-B
- USB-C
- Coaxial
- Optical
- Bluetooth
- HDMI-eARC
- Analog RCA

Please select the corresponding input source based on your actual device connection.

Note:

- All digital inputs do not support digital signal passthrough via coaxial or optical outputs.
- Audio can only be output through analog RCA, XLR, or headphone outputs.

Output Sources



Available output ports on the Luxsin X9 include:

- Balanced XLR
- Analog RCA
- Headphone Outputs

Please select the corresponding output based on your actual device connection.

Note:

- All digital inputs do not support digital signal passthrough via coaxial or optical outputs.
- Audio can only be output through analog RCA, XLR, or headphone ports.

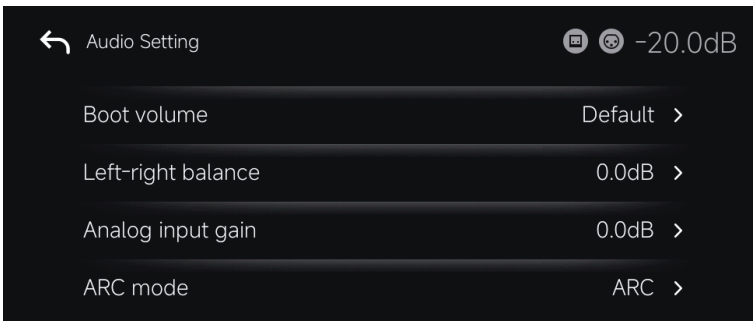
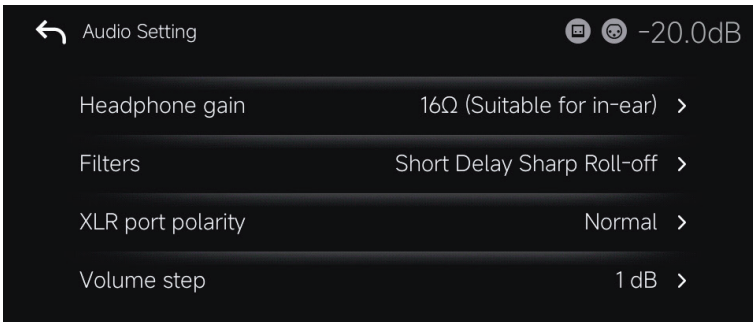
Audio Settings

The audio settings menu includes:

- Headphone Gain
- DAC Filter Mode
- XLR Output Polarity
- Volume Step
- Startup Volume
- Left/Right Balance
- Analog Input Gain
- ARC Mode

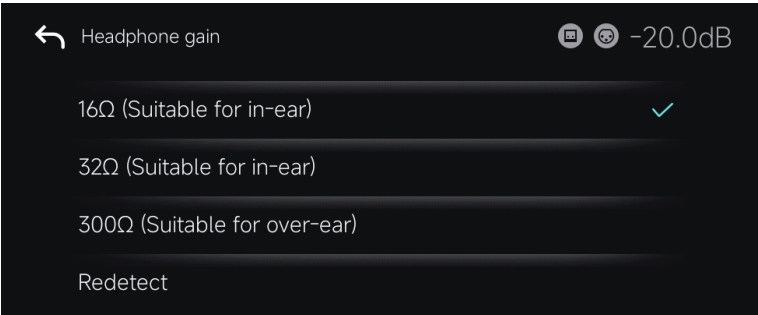
To access these options, go to:

Go to the Settings Menu > Audio Settings > Headphone Gain, and choose the appropriate gain level based on your headphones.



Headphone Gain:

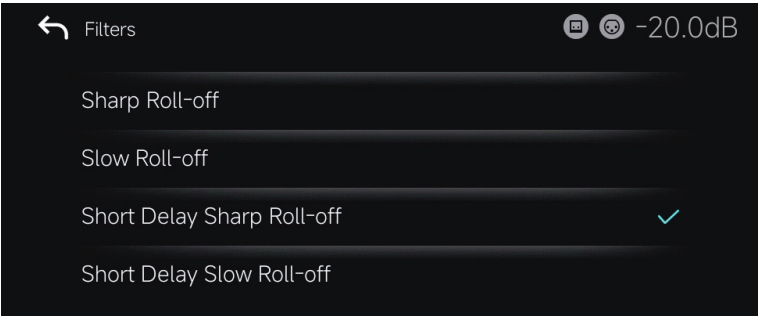
When you plug in your headphones for the first time after powering on the device, the system will automatically detect and apply the optimal gain setting for your headphone model.



Filter Characteristics Settings:

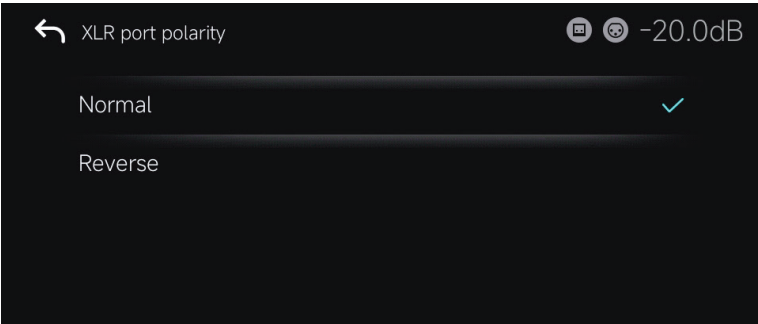
Go to Settings Menu > Audio Settings > Filter Characteristics.

You can adjust different filter types based on your personal preferences. Each filter corresponds to a unique sound output style, allowing you to tailor the listening experience to your taste.



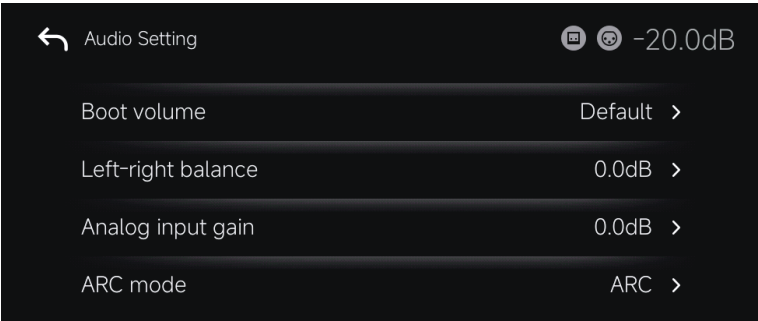
XLR Port Polarity

Navigate to Settings Menu > Audio Settings > XLR Port Polarity. You can choose between Normal or Inverted polarity settings.



Volume Settings

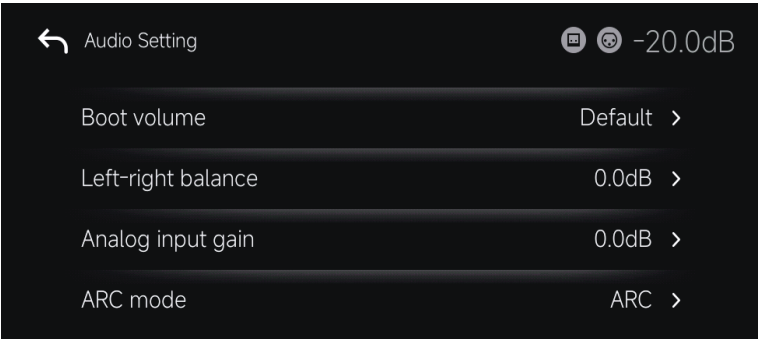
Navigate to Settings Menu > Audio Settings > Volume Step, Startup Volume, L/R Balance, or Analog Input Gain.



- Volume Step: Sets the increment/decrement value for each volume adjustment.
- Startup Volume: Sets the default volume level each time the device is powered on.
- L/R Balance: Adjusts the balance between the left and right channels within a range of -15 to +15 dB.
- Analog Input Gain: Adjusts the gain for analog inputs within a range of -12 to +12 dB.

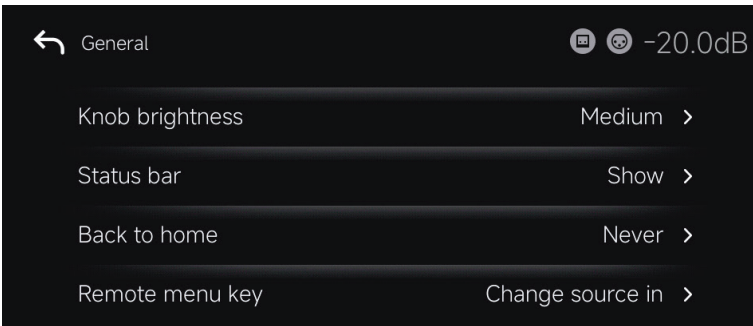
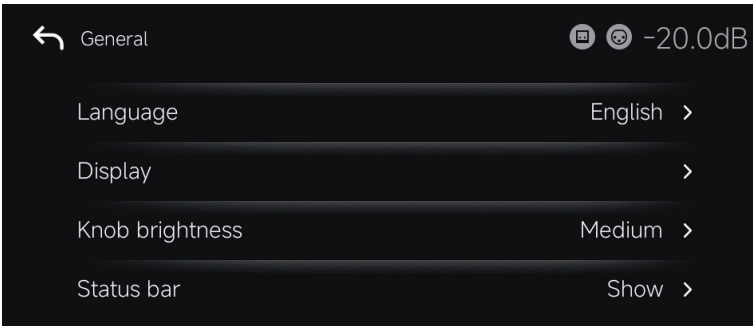
ARC Mode

Navigate to Settings Menu > Audio Settings > ARC Mode.
You can choose between ARC and eARC depending on your connected display device's capabilities.



General Settings

The General Settings menu includes options for: Language, Display, Knob Brightness, Status Bar, Back to Home, and Remote Menu Key.

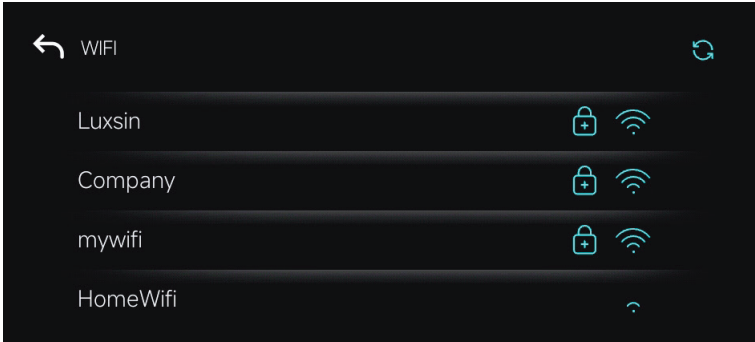


- Language: Choose your preferred interface language. Available options: English, Traditional Chinese, Simplified Chinese.
- Display:
- Screen Brightness: Brighter, Medium, Darker
- Turn Off Screen: Always On, No Operation for 30s, 1 min, 3 min, 5 min
- Knob Brightness: Adjust knob brightness for rotating displays. Options: Off, Brighter, Medium, Darker
- Status Bar: Top-right status bar can be set to Show, Hide, or Auto
- Back to Home: Set a timer to return to the main screen after inactivity. Options: never, 20s, 40s, 60s
- Remote Menu Key: Customize the function of the remote control's menu key to either Switch Input Source or Switch Filter Mode

WIFI

Before using the Luxsin X9, please ensure it is connected to a network. This device supports Wi-Fi only.

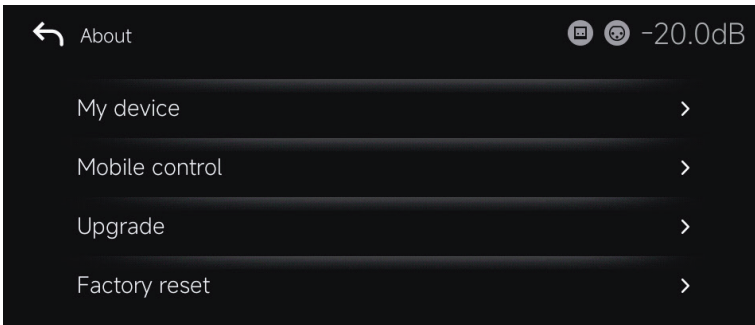
To connect: Go to the Home Screen > “Wi-Fi” to access the Wi-Fi settings.



About

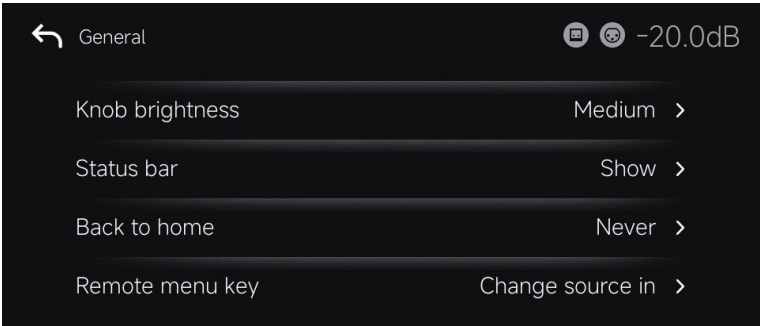
The About section includes the following settings:

- My Device:
- Mobile Control
- Upgrade:
- Factory Reset



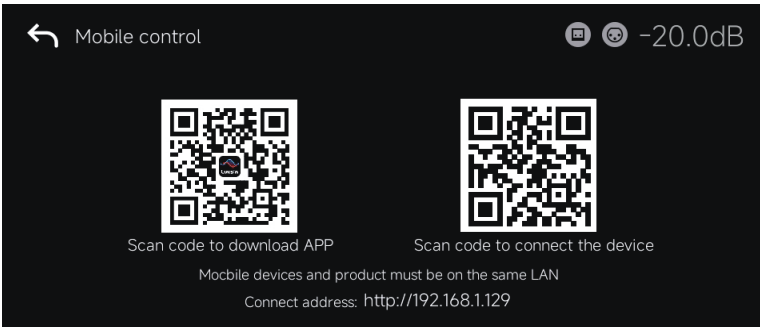
My Device

Go to About > My Device to view all relevant device information, including:Bluetooth, MAC Address, Model, Firmware Version.



Mobile Control

Go to About > Mobile Control. The Luxsin X9 supports control via mobile app, iPad, and PC.



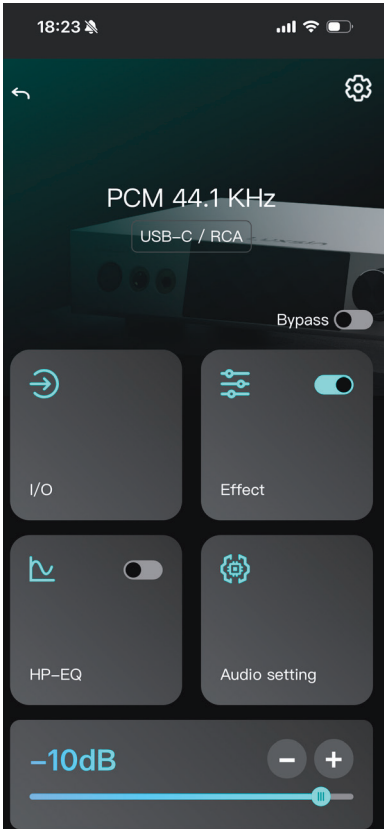
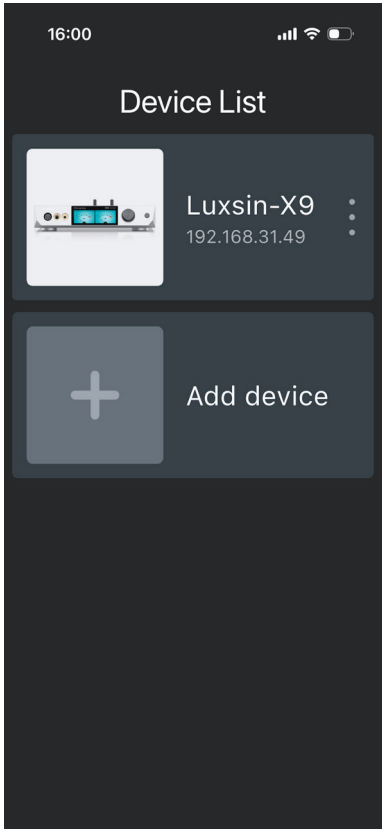
You can scan the QR code to download and install the control app, or visit the official website or the resources download page in this manual to download and install it.

Mobile App Control

After installing the app, make sure your Luxsin X9 and mobile phone are connected to the same local network.

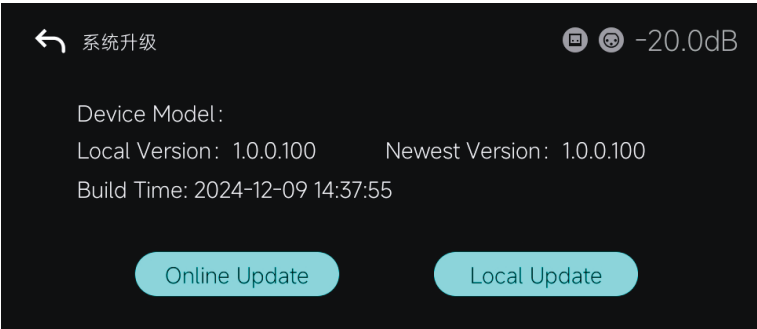
Then open the app, select Luxsin-X9, and proceed to Add Device.

Once connected successfully, you will be able to access the control interface.



System Update

Go to About > System Upgrade to enter the upgrade interface. There are two upgrade methods available: Online Update, Local Upgrade.



Online Update

After connecting to a Wi-Fi network, go to About > Upgrade > Online Update. Tap “Online Update” to fetch the latest firmware via the internet. Follow the on-screen instructions to complete the update. The device will automatically reboot once the upgrade is complete.

Local Upgrade

Download the Luxsin X9 firmware upgrade package from the official website and copy it to the root directory of a USB flash drive.

Insert the USB drive into the USB-A port on the device.

Go to About > Upgrade, then select “Local Update” and choose the upgrade file.

Follow the on-screen instructions to complete the upgrade. The device will automatically reboot upon completion.

Note:

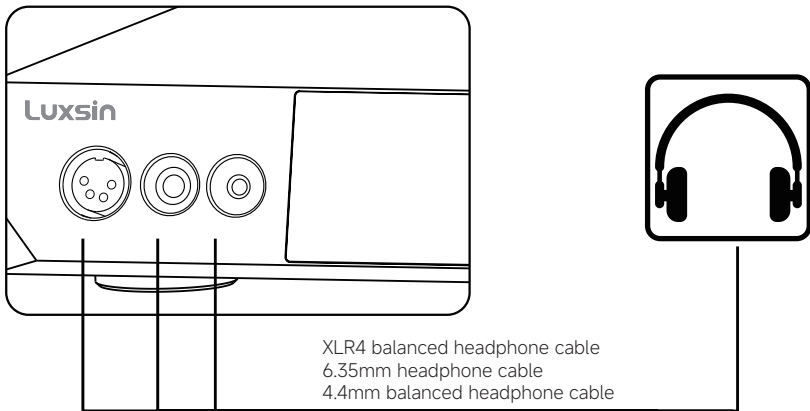
- Do not unplug the USB drive or power off the device during the upgrade process.
- It is recommended to use a FAT32-formatted USB drive.
- Do not unzip the downloaded upgrade file.

Output Signal Connection & Setup

The Luxsin X9 provides multiple audio output options, including XLR4 balanced headphone output, 6.35mm headphone output, 4.4mm balanced headphone output, as well as unbalanced RCA and balanced XLR analog outputs.

Headphone Output Connection

Connect your headphones to the corresponding output port using one of the following:

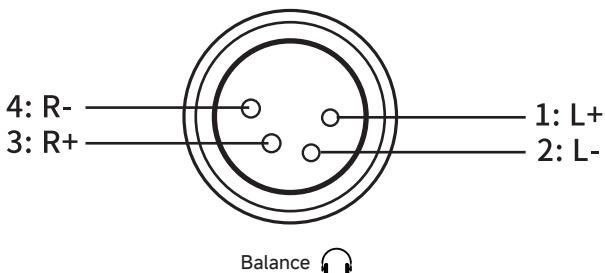


The device will automatically detect headphone impedance when using the 6.35mm or 4.4mm outputs.

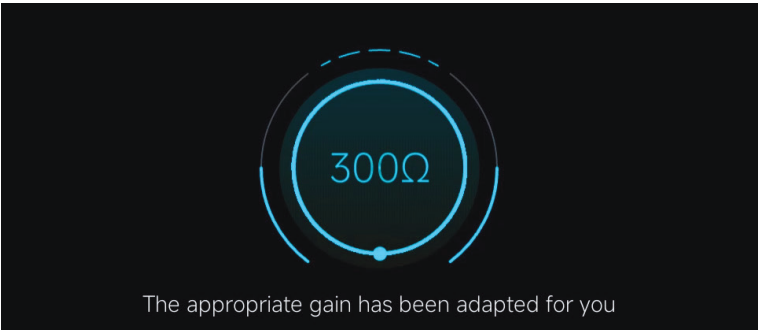
Notes:

- If your headphones use a 3.5mm TRS plug, you will need a 3.5mm to 1/4" adapter (included).
- When inserting or removing a 6.35mm (1/4") connector, do so quickly and smoothly to ensure a full connection or disconnection.

Due to the design of connector, a partial insertion may cause a short circuit between the left and right channels, potentially triggering a short-circuit protection mechanism.



The diagram above shows the pin assignment for the XLR4 balanced headphone output. Please note that Pin 2 (L-) and Pin 4 (R-) are independent signal pins and must not be connected together, unlike the ground pin on single-ended headphones. Never use an adapter to connect a balanced headphone output to a single-ended headphone.

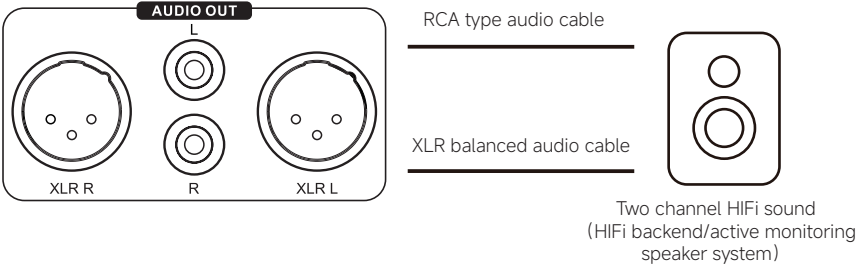


Important Notes:

- The XLR4 balanced headphone output does not support automatic impedance detection. You can manually set it by going to:
Home > Audio Settings > Headphone Gain, then select the gain that suits your headphone's impedance.
- Once one headphone output is in use, other headphone outputs will not be detected or activated.

XLR/RCA Output Connection

Use a pair of RCA or balanced XLR (Canon) analog audio cables to connect the RCA or XLR output ports of the device to the corresponding input ports of your active speakers or HiFi power amplifier.

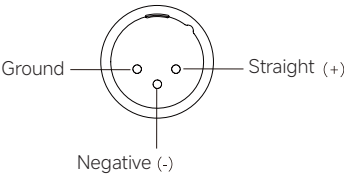


Then go to the Input/Output Settings and select “RCA/XLR” as the output port.

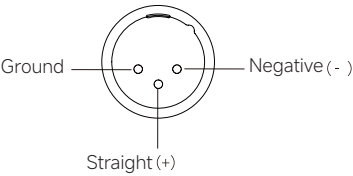
Note:

- The device is equipped with two independent stereo output ports: RCA and XLR balanced ports. You can choose to use them separately or select simultaneous output from both.
- It is recommended to prioritize the use of the XLR balanced port for connection, as it provides better noise suppression and signal integrity.

In certain audio systems, the XLR port’s positive and negative polarity may be reversed. The Luxsin X9 system is set to normal polarity by default. The polarity for the corresponding ports is shown in the diagram below.



Schematic diagram of port polarity when setting forward direction



Set reverse port polarity diagram

If the connected audio equipment has reversed polarity, you can select “Audio Settings” > “XLR Port Polarity” to adjust the settings.

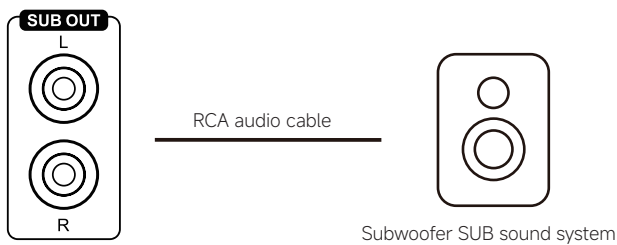
Note: This function only applies to digital signals. The RCA analog input does not support this feature.

To reduce potential signal interference when both RCA and XLR are outputting simultaneously, the Luxsin X9 allows you to select separate output for XLR and RCA. When using XLR output, it is recommended to set the output port to XLR only in the menu. Similarly, set the RCA output to RCA only when using RCA.

This separate output method ensures better audio performance and enhanced sound quality.

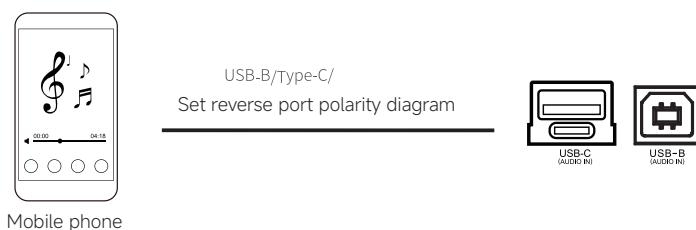
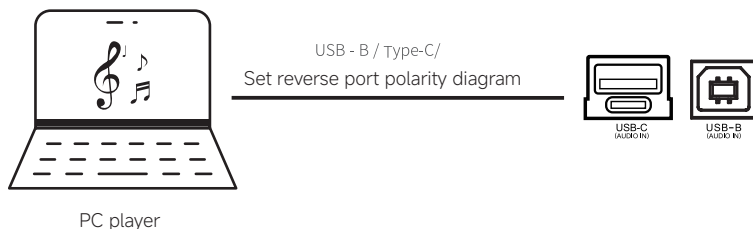
Subwoofer SUB Analog Output Connection

Use a pair of audio cables to connect the SUB RCA output port of the Luxsin X9 to the SUB RCA Line In port on the subwoofer. Then, go into the “Effect” settings and enable the subwoofer output function.



Input Signal Connection and Settings

The Luxsin X9 supports a variety of digital audio input connections, as well as analog audio input connections. Digital audio inputs include Bluetooth, USB-B, USB-C, Coaxial, Optical, and HDMI-EARC. The corresponding audio output interfaces for digital audio inputs are RCA/XLR.



Analog audio inputs include RCA inputs, with corresponding audio output interfaces being RCA/XLR.

USB Type B/C Input Connection

To connect the Luxsin X9 to a computer, device with USB audio output, or mobile phone, use a USB-A to Type-B data cable. In the input/output settings, select "USB-B" as the input port.

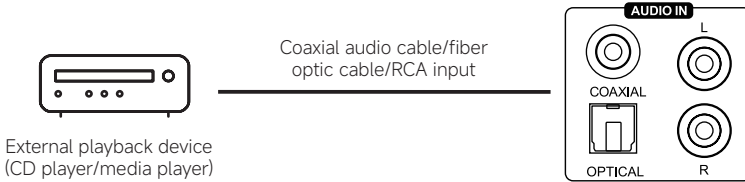
Note:

- For Windows systems, you need to install the corresponding driver for the Luxsin X9. Please refer to the resource section for driver download.
- After connecting to the computer, set "Luxsin X9" as the default audio output device:
- Windows: After downloading and installing the driver, go to Control Panel → Hardware and Sound → Sound → Playback, and select "Luxsin X9 DAC".
- Mac: No driver installation is needed. After connection, go to System Preferences → Sound → Output, and select "Luxsin X9".

- The USB input supports up to stereo DSD512, PCM 768KHz 32Bit formats. Actual specifications may depend on the connected playback hardware and software support.
- For Apple devices, when using OTG Type-C cables, an MFi-certified data cable is required for playback.

Optical / Coaxial / RCA Input Connection

To connect a front-end device such as a media player or CD player that has SPDIF signal output, use an optical or coaxial audio cable. Connect it to the corresponding Optical, Coaxial, or RCA input on the Luxsin X9 for decoding. In the input/output settings, select the appropriate input port: “Optical Input”, “Coaxial Input”, or “RCA Input”.



Note:

- For Coaxial connection, please use a 75-ohm coaxial audio professional signal cable.
- For Optical connection, please use a standard optical audio signal cable.
- Optical / Coaxial / RCA Inputs support up to PCM 192KHz 24Bit and DOP64.

Bluetooth Audio Input Connection

This unit is equipped with Qualcomm’s flagship QCC5125 Bluetooth audio receiver module, supporting high-resolution audio protocols such as SBC, AAC, aptX, aptX LL, aptX HD, and LDAC. It functions as a high-quality Bluetooth decoder and can pair with various mobile devices for wireless audio playback.

To use Bluetooth input:

Go to Input/Output Settings and select “Bluetooth Input” as the input source.

Then, on your mobile device, enable Bluetooth and search for “Luxsin X9”. Tap to pair and connect.

Note:

- The actual Bluetooth audio format received depends on the output format of the transmitting device.

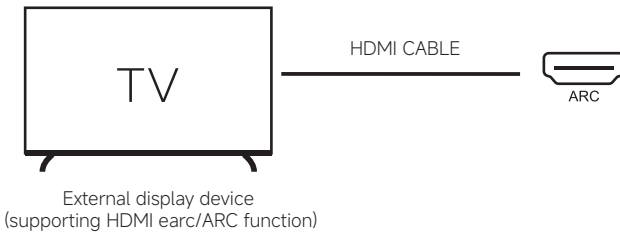
- On Android phones, you can typically change the Bluetooth output format in the Developer Options.

It is recommended to select aptX HD or LDAC for the best lossless audio performance.

ARC Input Connection

ARC Input Connection

Use an HDMI cable to connect the Luxsin X9 to a TV, projector, or other display device that supports HDMI eARC/ARC. This enables HDMI Audio Return Channel (ARC) functionality, allowing audio from the display device to be sent back to the Luxsin X9.



To set it up:

Go to Input/Output Settings and select "ARC Input" as the input source.

- Please connect to the HDMI port labeled ARC or eARC on your TV.
- The HDMI ARC input supports up to PCM 192kHz 24Bit audio.
- Please use a physically wired HDMI cable. Do not use optical HDMI cables.

Precautions

Resources & Downloads

For firmware updates, USB drivers, and the mobile control app, please visit our official website: www.luxsinaudio.com. Go to the Download Center to access the latest files.

After downloading the driver, extract the ZIP package, double-click the .exe installer, and follow the on-screen instructions to complete the installation.



Mobile App Control



WeChat Official

*Recommend using a mobile browser to scan the QR code

Special Notice:

To enhance user experience, Luxsin Acoustic regularly updates the firmware for its products. The content of this manual may differ from the actual product used. If there are any changes to the device's functions or specifications, no further notice will be given.

For more usage information, please visit our official website: www.luxsinaudio.com.

Safety Warnings:

1. This device should not be exposed to splashes or drops of water. Do not place items filled with liquids, such as vases, on the device.
2. The device's power disconnecting mechanism is the power input plug or the power switch at the back. For ease of operation, ensure that the power plug or power switch is not obstructed by any objects.
3. This device is a Class I product, and proper grounding measures must be ensured when using it.