



MATRIX Mini-i Series Music Streaming DAC User Manual

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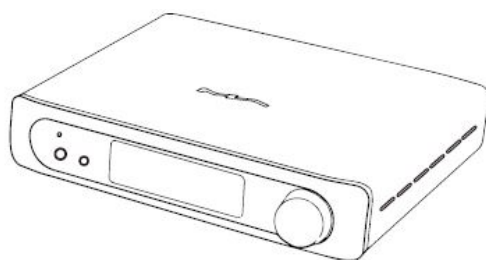
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MATRIX Mini-i Series Music Streaming DAC



Packing list



1



2



3

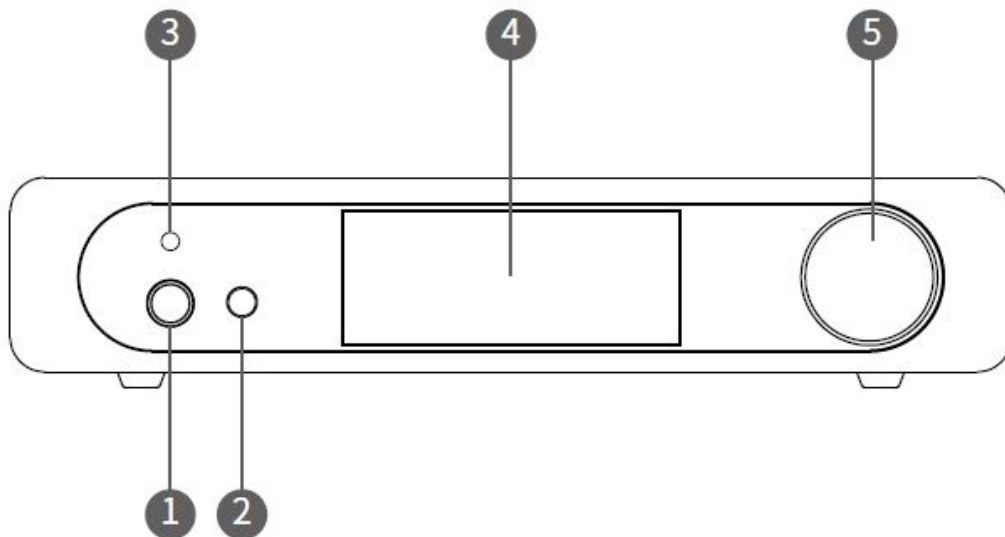


4

1. Product x1
2. Remote control x1
3. Power cord x1
4. Lithium battery x1*

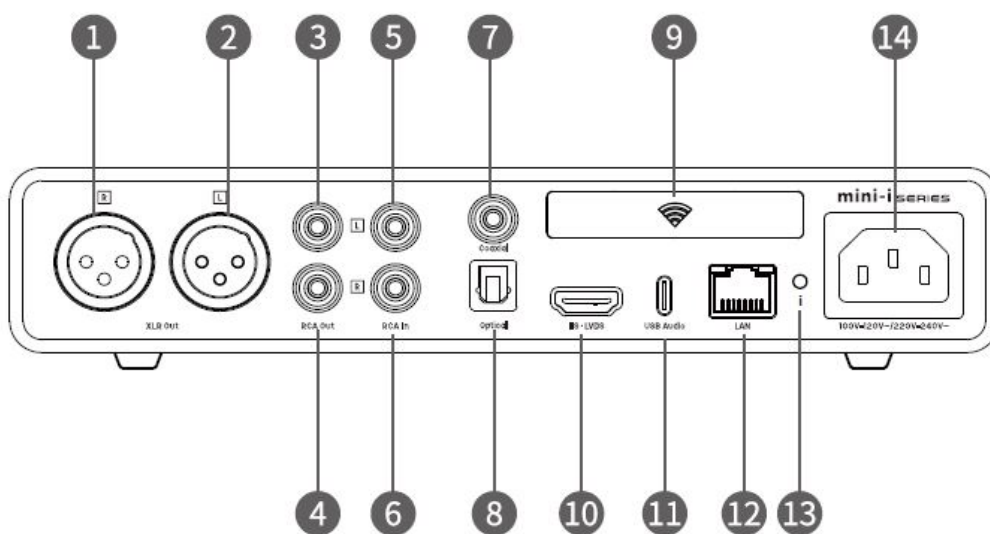
Parts and names

Front panel



1. 6.35mm headphone jack
2. 4.4mm balanced headphone jack
3. Remote control sensor
4. LCD screen
5. Power on/standby/volume/control knob

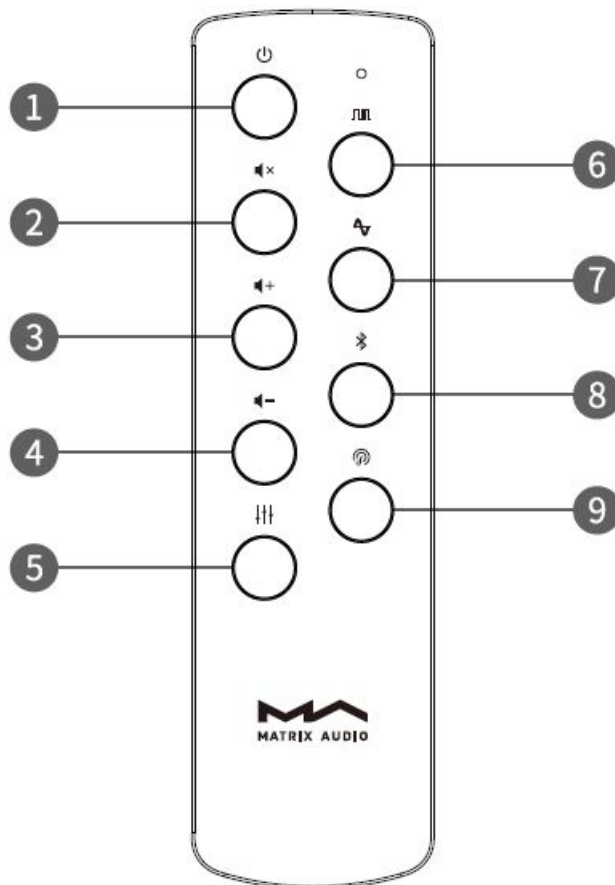
Rear panel



1. XLR right channel output
2. XLR left channel output
3. RCA left channel output
4. RCA right channel output
5. RCA left channel input
6. RCA right channel input
7. Coaxial input
8. Optical input
9. Wi-Fi/Bluetooth antenna
10. IIS-LVDS input

11. USB Audio port
12. Ethernet port
13. Settings menu
14. Power input

Remote control

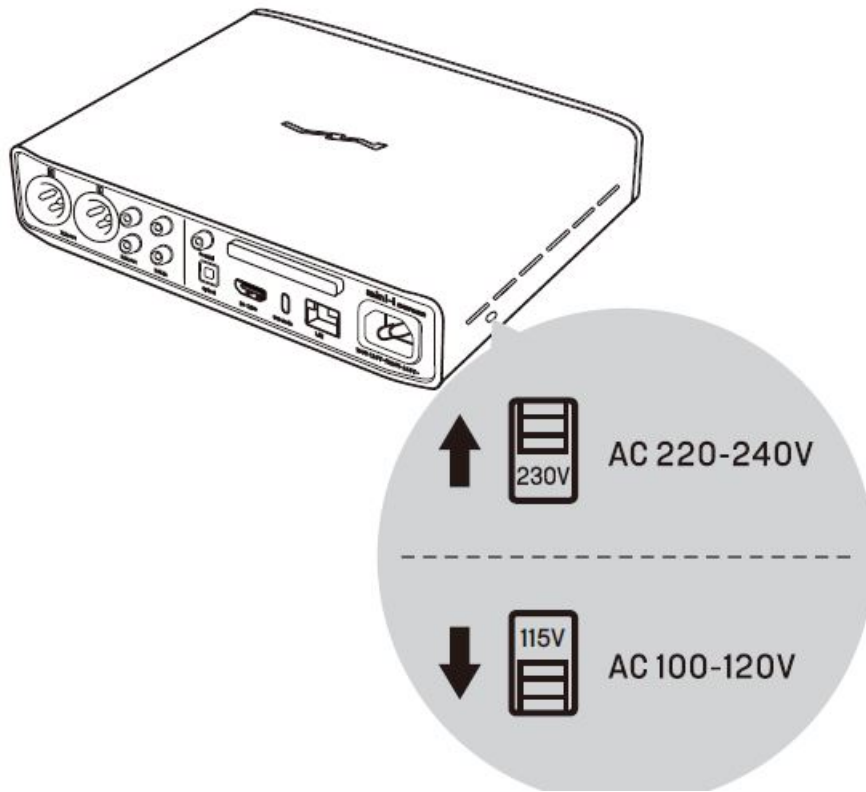


1. Power on/Standby
2. Mute
3. Volume +
4. Volume -
5. Filter
6. Digital input*
7. Analog input
8. Bluetooth
9. Streaming audio

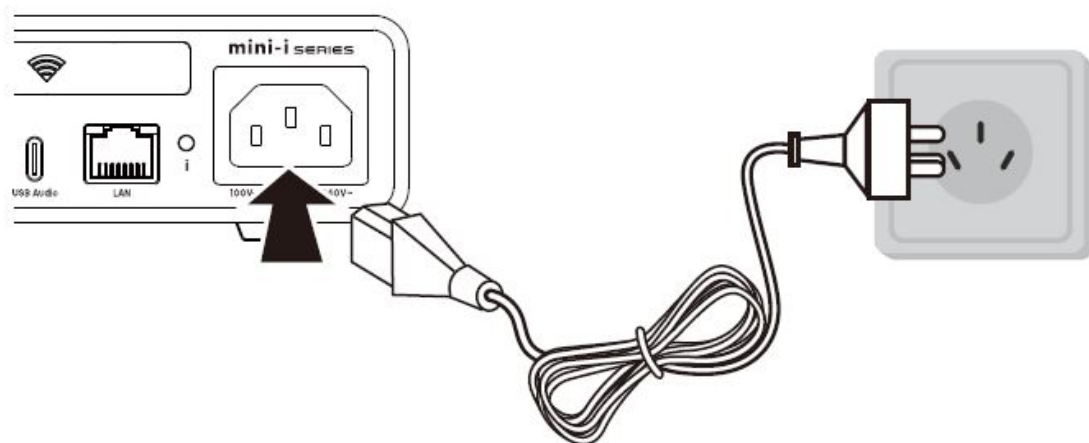
Connections

Connect to AC power

mini-i Pro 3 and mini-i 3 is compatible with AC100-120V and AC220-240V power specifications. Please make sure to select proper voltage settings according to your local voltage environment before connecting the unit to power supply. As shown:



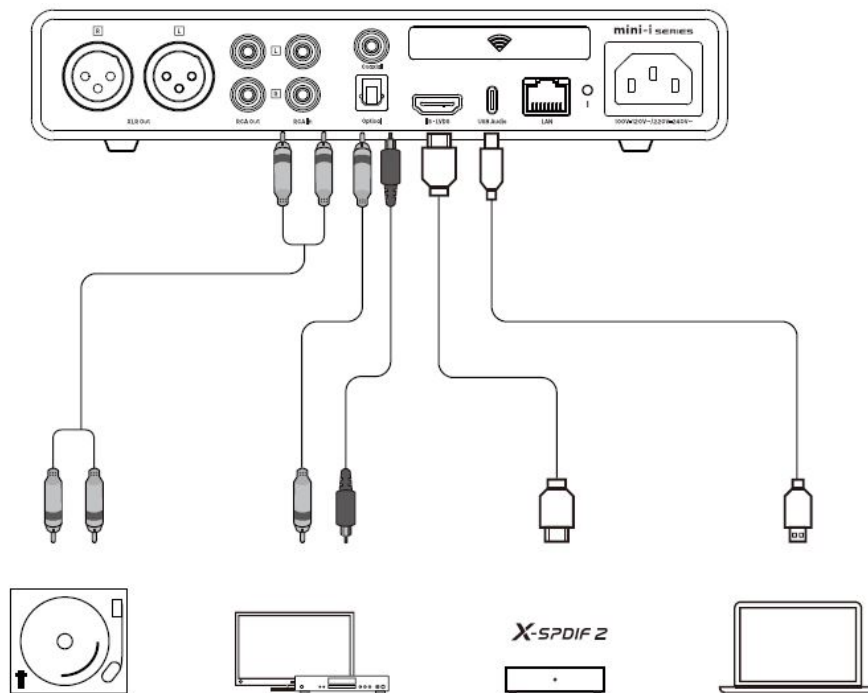
The 2 position of the voltage switch are 115V and 230V, each stands for: Position 115V is fit for AC110V-120V 50/60Hz Position 230V is fit for AC220V-240V 50/60Hz



Please use the power cable which includes a ground. Ensure you have a reliable ground connection to avoid an electrical shock. Please unplug the power cable if you need the unit to be disconnected from the power completely.

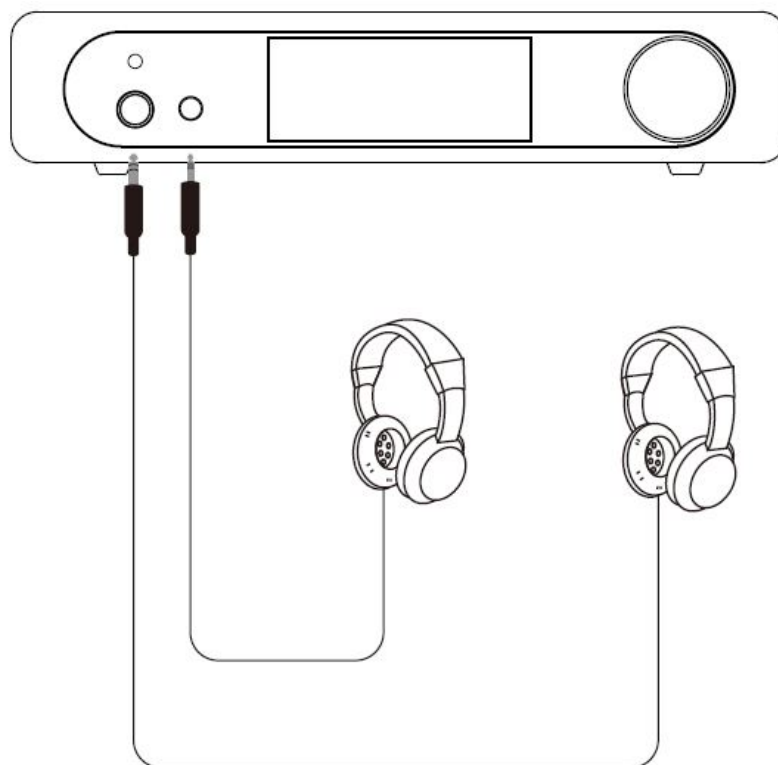
Connect to input source

Connect to S/PDIF output devices over coaxial and optical port, or connect to Matrix audio interface over IIS-LVDS port. Connect to vinyl turntables or other analog output devices over RCA line input ports.



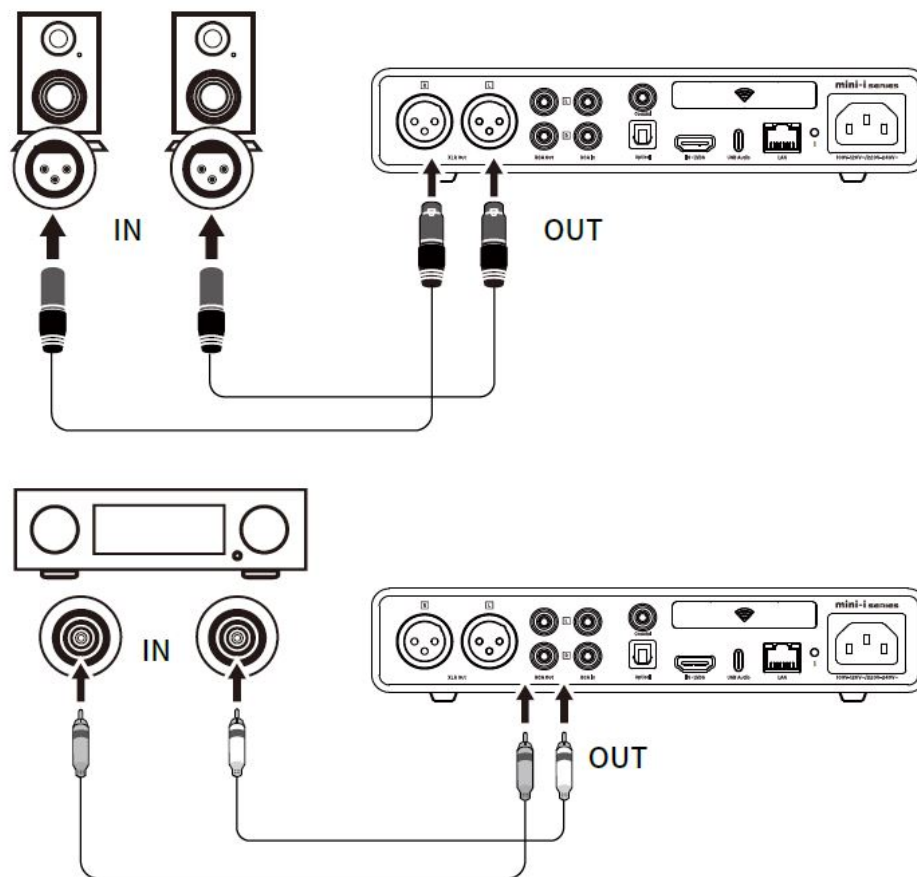
Connect to headphones

There are two headphone jacks on the front panel where you can connect a balanced headphone with 4.4mm plug and an unbalanced headphone with 6.35mm plug at the same time.



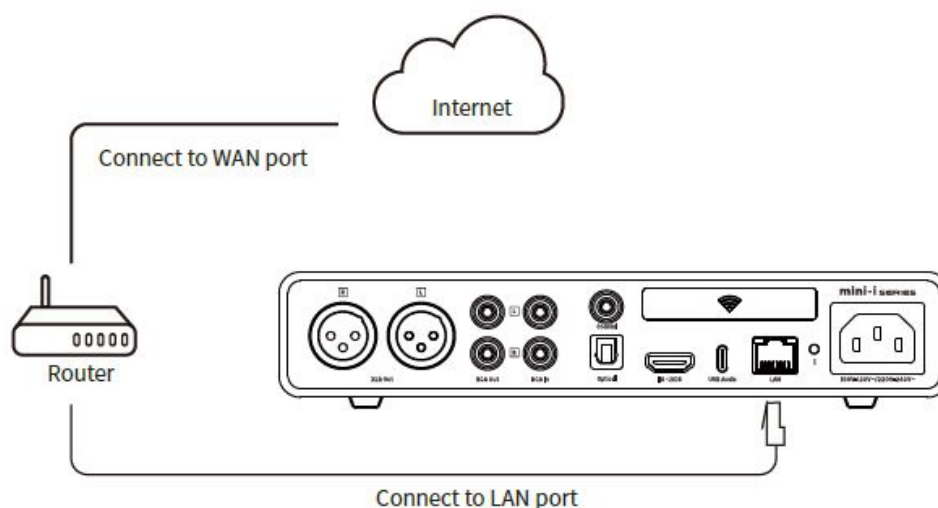
Connect to active speakers or power amps

In order to avoid damage to your devices, please turn off the active speakers or amplifiers before connecting them to mini-i Pro 3 and mini-i 3.

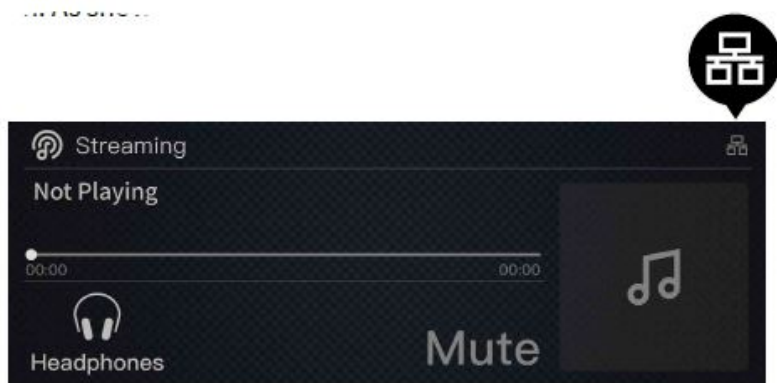


Connect to LAN

Connect mini-i Pro 3/mini-i 3 to the network router with Ethernet cable a CAT-5 or higher version shielded ethernet cable is recommended, and let the unit in the LAN as shown below:

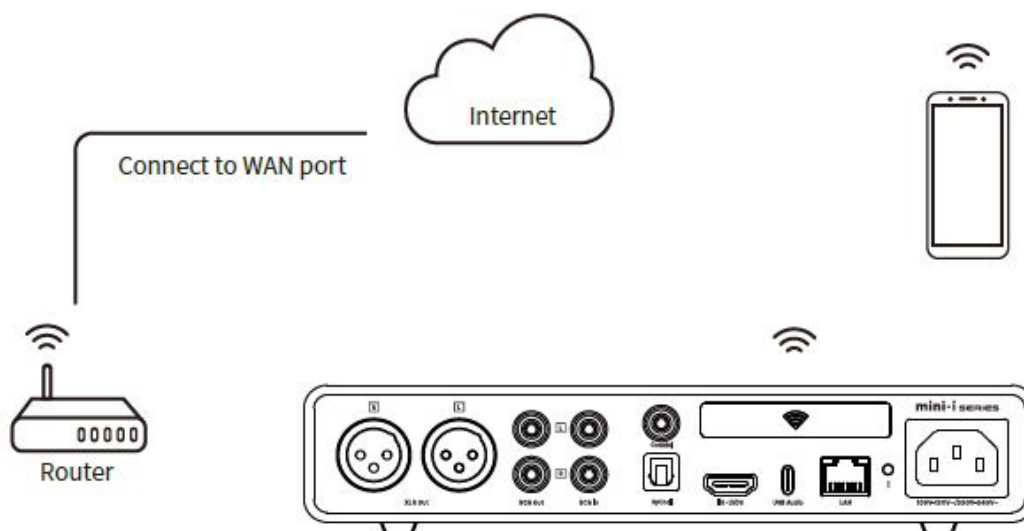


It is recommended to set up the router as DHCP server, the unit will be assigned IP address automatically. After connected to the LAN, there will be an icon of Ethernet in the top right corner of the screen. As shown:

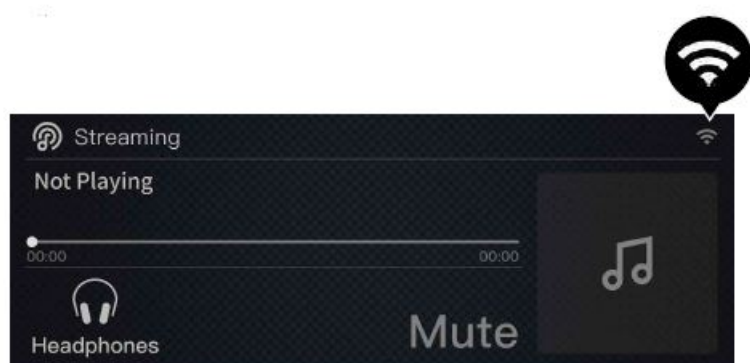


Connect to WLAN

Let the mini-i Pro 3 in the network as shown (does not apply for mini-i 3):



Enter the Wi-Fi settings (refer to “5. Settings” in page 12), turn Wi-Fi on, select the SSID and enter the password. The mini-i Pro 3 supports 2.4GHz and 5GHz frequencies. After connected to the WLAN, there will be an icon of wireless network in the top right corner of the screen. As shown:

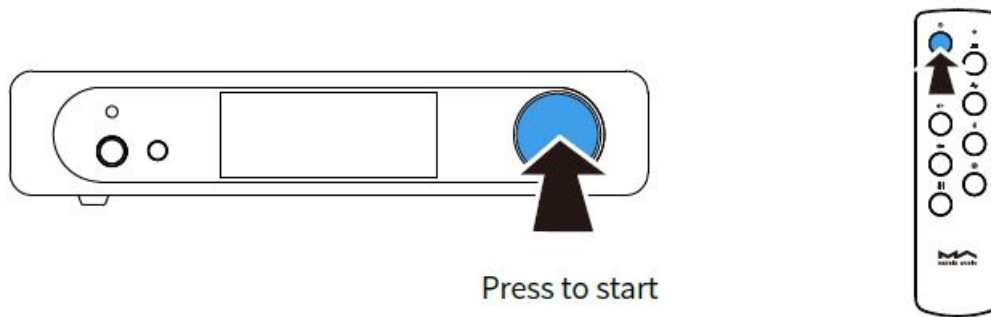


Playback

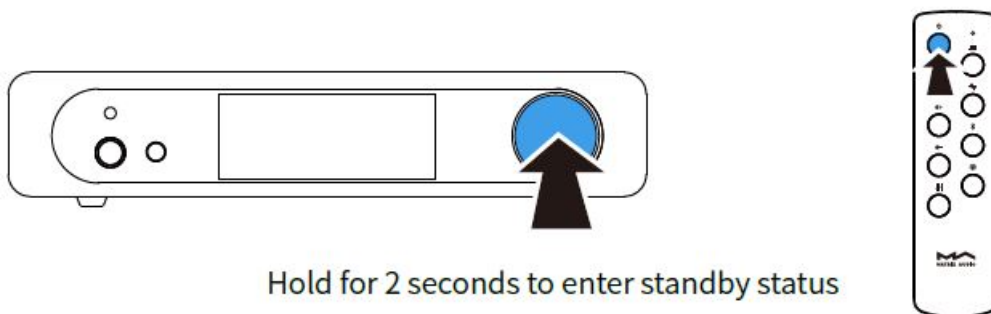
Basic operations

Power on and standby

After connecting the unit to the power supply, press the knob on the front panel or the power On/Standby button on the remote control, the unit starts to boot. The start-up process after connecting to the power supply takes about 30 seconds. The start-up progress will be displayed on the screen. If the power supply is not disconnected, the unit can be restored from standby mode within 3 seconds.

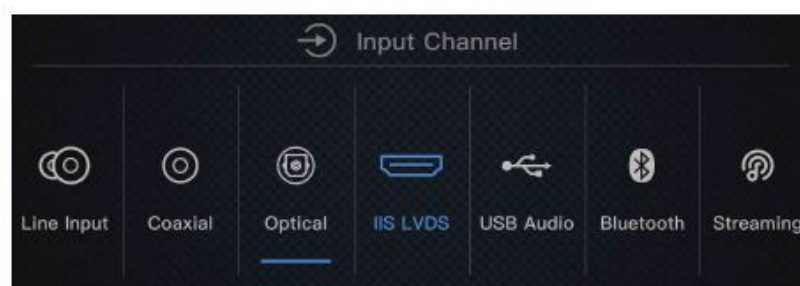


When the unit is working, press and hold the knob or the On/Standby button on the remote control for about 2 seconds, it will enter standby status.

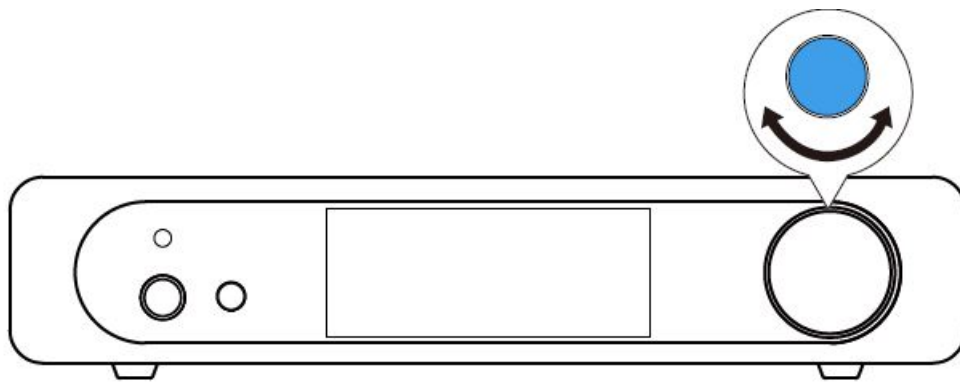


Hold for 2 seconds to enter standby status

Select input source



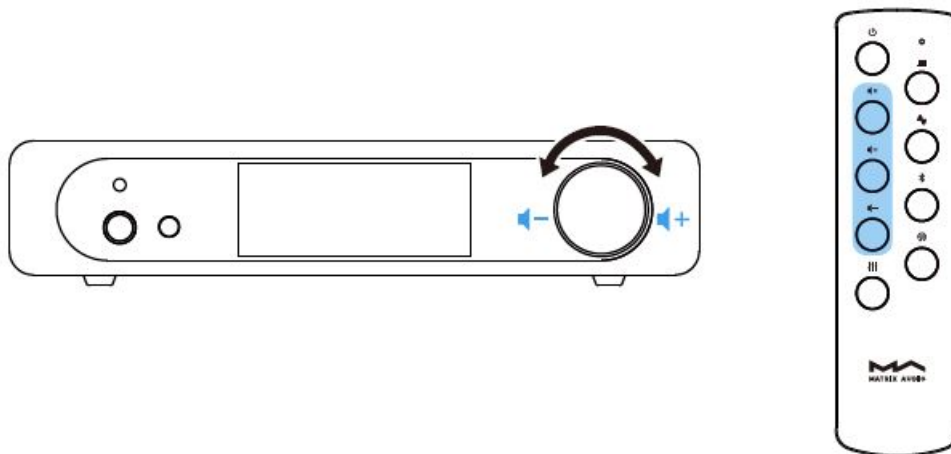
Rotate the knob to select among 7 input channels including coaxial, optical, IIS-LVDS, USB Audio, Bluetooth, and streaming audio. Press the knob to confirm the selected channel.



Volume control

Volume adjustment

The volume can be adjusted through the knob on the front panel or the buttons on the remote control. The current volume will be displayed as decibels in the screen. The line output and headphone output have independent volume settings. The line output can also be set to fixed output.

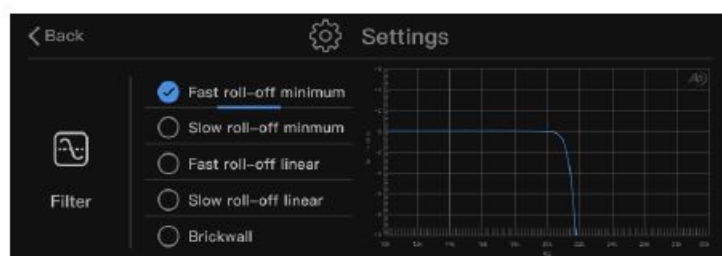


CAUTION

“Fixed output” means that the line output of the device signal with maximum level at 0dB. Before selecting this mode, please make sure that your power amplifier or active speaker has been adjusted to a lower volume level. If the amplifier or speakers do not have volume control, Do NOT set up to “Fixed output” mode, otherwise this operation may damage to your devices and harm to your ears.

Filter settings

When playing PCM audio, you can choose to apply filters to obtain different sound performances. Enter the “Filter” option in settings menu (refer to “5. Settings” in page 12), rotate the knob to choose the filters, and press the knob to confirm the selected filter.

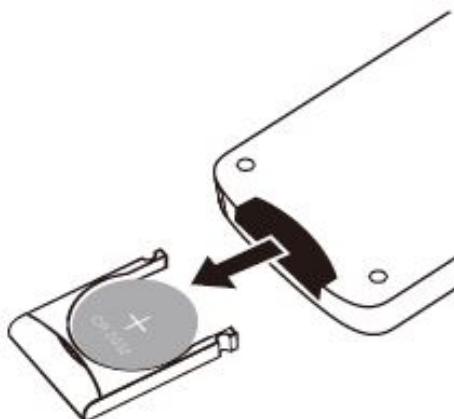


Auto standby

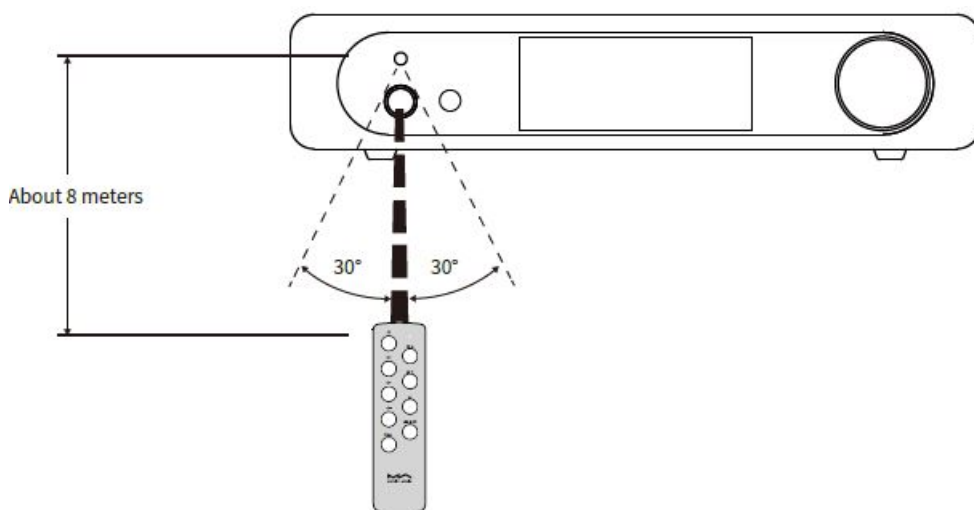
Optical, coaxial, USB Audio, RCA in and IIS-LVDS input selected: the time of signal unlocked reaches the set duration, and no any knob and remote control operation; Bluetooth input selected: the time of bluetooth disconnected reaches the set duration; Streaming audio input selected: the time of no streaming audio playing reaches;the set duration; The unit will automatically enter standby mode when the conditions above are met.

Remote control

The remote control uses a CR2032 coin cell. Install the coin cell in the slot at the bottom of the remote control, please note the polarity.

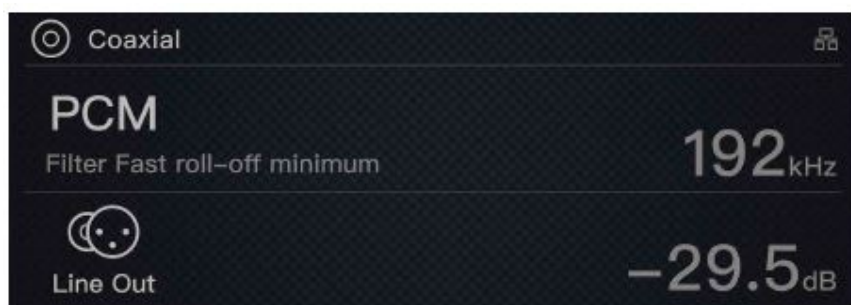


Point the remote control to the remote sensor like the following picture, the remote distance is about 8 meters and the battery life is about one year, please replace the battery if the remote distance becomes shorter or loses sensitivity.



Play music through optical, coaxial or IIS-LVDS port

Connect the unit to standard S/PDIF output devices over optical and coaxial, or connect to Matrix audio interface over IIS-LVDS port. The signal format and the sampling rate will be displayed when the signal be locked properly. As shown:



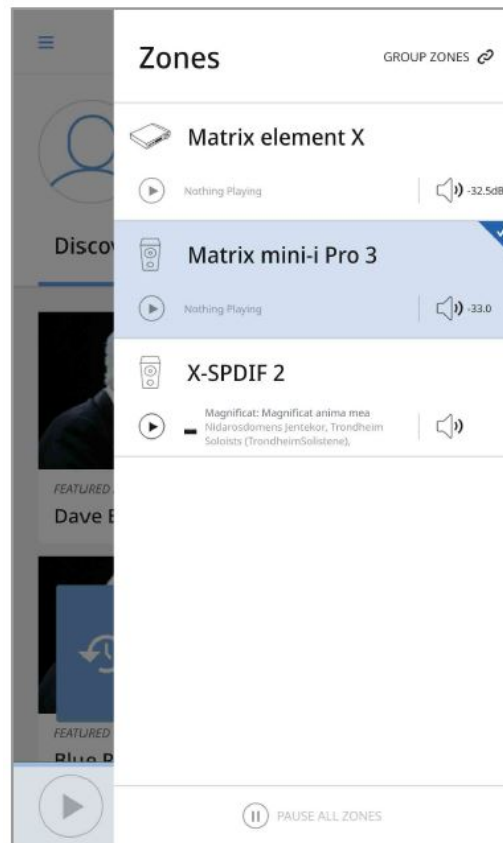
If the screen displays “No audio input”, please check the signal cable connection and if the front-end device is outputting signal.

Play music over AirPlay and Roon

Mini-i Pro 3/mini-i 3 supports AirPlay 2, when connected to the LAN, you can send the music stream to the unit from iPhone, iPad or macOS computer over AirPlay. Let the iPhone, iPad and macOS computer in the same network with this unit, tap AirPlay icon in the Control Center and select mini-i Pro 3 or mini-i 3 as playback device, then enjoy the music.



Mini-i Pro 3 and mini-i 3 is Roon Ready, you can enable and select this unit as an endpoint from Roon controller app, the audio will be streamed to the unit bit-perfectly. The metadata and album art image of the playing track will be displayed in the device screen. You also can control output volume, power on and enter standby mode through the Roon controller app.

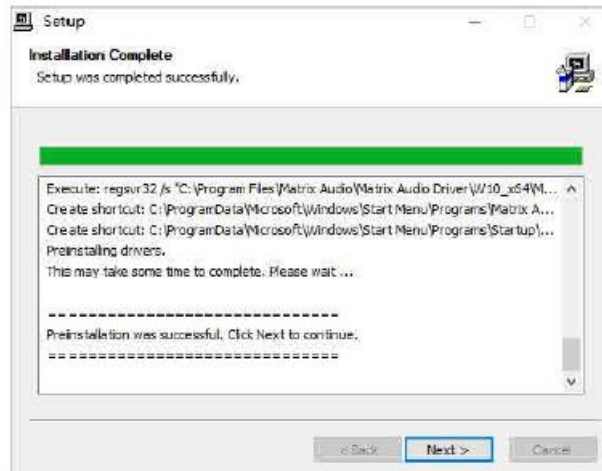
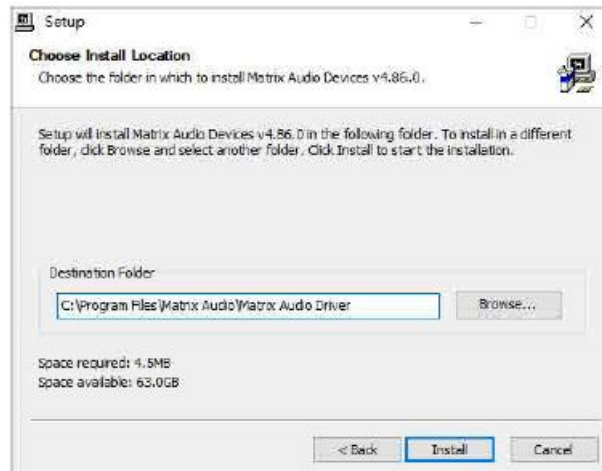
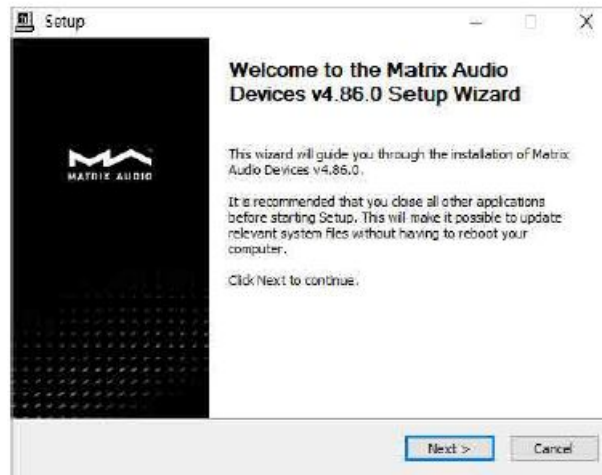


Play music over USB Audio port

The USB Type-C port of mini-i Pro 3 and mini-i 3 is double-sided supported, the unit can be recognized by host device connected over both Type-C to Type-C and Type-C to Type-A cables. Driver software is needed for Windows 7/8/10 operating systems, follow the instructions to install the driver:

Install driver for Windows

- Run the driver installer, and click “Next”.
- Select the installation path and click “Install”.
- Click “Next” after installation is complete.
- Click “Finish” to complete installation.



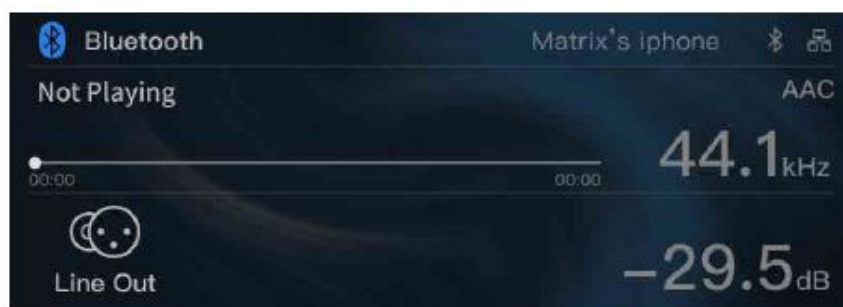
mini-i Pro 3/mini-i 3 can be connected to an iPhone or iPad via Lightning to USB Camera Adapter. mini-i Pro 3/mini-i 3 can be connected to Android devices via OTG adapter, but it's not guaranteed to be compatible with all the Android devices.

Play music via Bluetooth

mini-i Pro 3/mini-i 3 can work as Bluetooth DACs, it supports AAC, SBC, aptX, aptX HD and LDAC formats. Turn on Bluetooth on mobile phones or audio players, search for available devices, you will find Bluetooth device name similar to "mini-i_Pro_3_xxx" or "mini-i_3_xxx", select the device and wait for pairing complete.



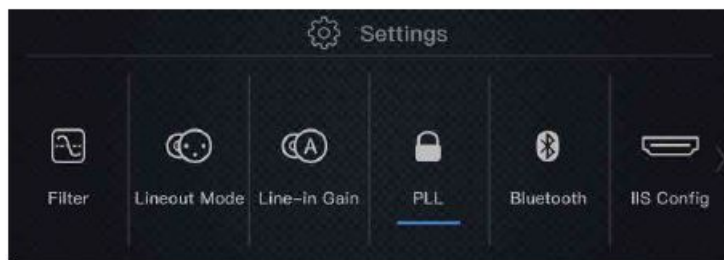
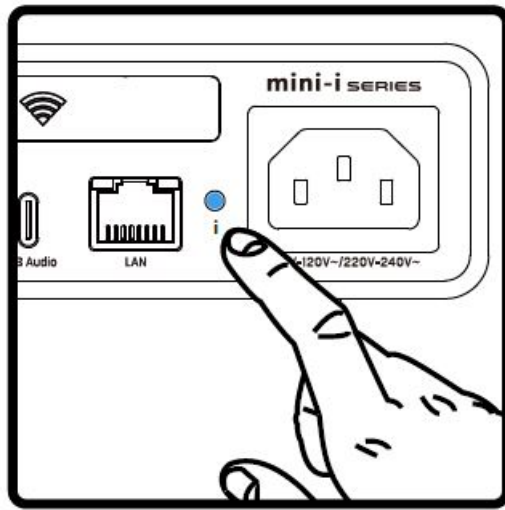
After Bluetooth connection is established, the sender device name will be displayed in the screen, as shown:



Digital audio stream will be send to and be handled by this unit, when playing music over Bluetooth, the coding standard, sampling rate and the metadata of the playing track will be displayed in the device screen. For some cases, lyrics can be displayed in the screen.

Settings

Press the "i" button on the rear panel when the unit is working, you can enter the Settings menu, as shown below:

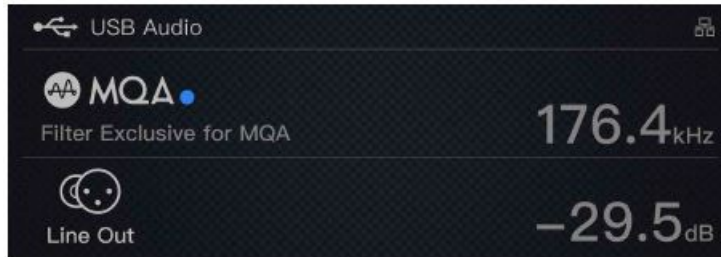
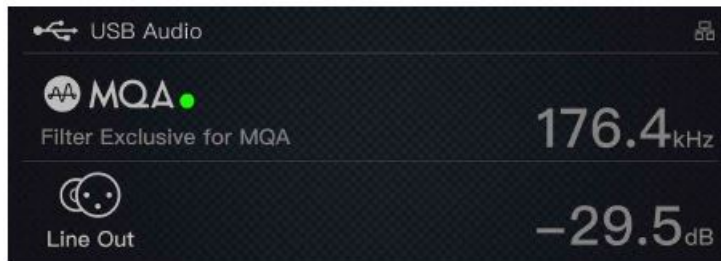


Rotate the knob to select configuration items, enter the item by pressing the knob. You can configure the unit according to the tips in the screen.

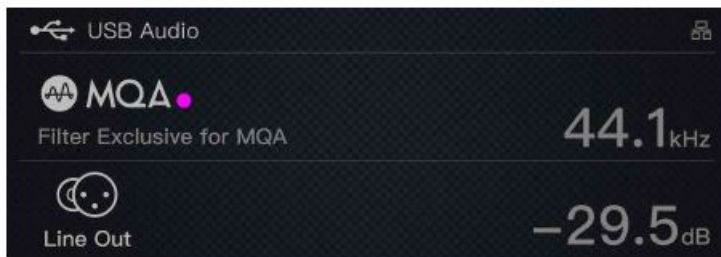
Appendix

About MQA (Master Quality Authenticated)

MQA is an award-winning British technology that delivers the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download. 'MQA' or 'MQA.' indicates that the product is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material. mini-i Pro 3 includes MQA technology, which enables you to play back MQA audio files and streams over USB audio port or from Roon, delivering the sound of the original master recording. Green or blue dot beside MQA logo indicates that the product is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material.

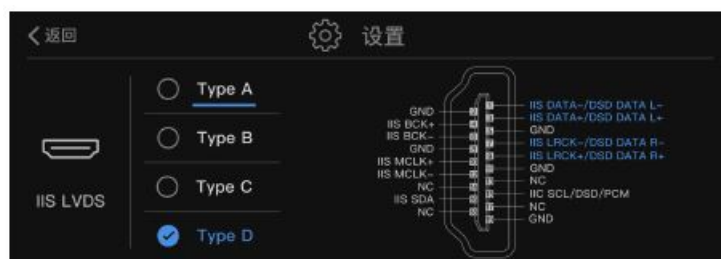


The dot glows magenta to indicate that the unit is rendering an MQA stream or file. This delivers the final unfold of the MQA file.



IIS-LVDS Port

The IIS port of mini-i Pro 3/mini-i 3 is based on standard 19-pin HDMI connector. It uses 4 sets of LVDS differential signals to transmit IIS-LVDS data. It supports up to 32Bit/768kHz PCM signal input and 1Bit/45.1MHz DSD signal input. There are 4 different IIS-LVDS port definitions in this unit, you can find the pin definition diagram in “IIS Config” option in settings menu.



Technical Specifications

Hardware platform

CPU: NXP i.MX 6UL Cortex-A7 @900MHz
D/A Chip: ES9038Q2M
Clock Source: Crystek CCHD-950 mini-i Pro 3

Digital Input

Optical coaxial

PCM 16-24Bit /44.1kHz, 48kHz, 88.2kHz, 96kHz,

176.4kHz, 192kHz

DSD 2.8MHz (DoP)

IIS LVDS

PCM 16-32Bit /44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz,

192kHz, 352.8kHz, 384kHz, 705.6kHz, 768kHz

DSD 2.8MHz, 5.6MHz, 11.2MHz (DoP)

DSD 2.8MHz, 5.6MHz, 11.2MHz, 22.4MHz (Native)

USB Audio

Type C double-sided support

PCM 16-24Bit /44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz

192kHz, 352.8kHz, 384kHz, 705.6kHz, 768kHz

MQA 16-24Bit /44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz

192kHz, 352.8kHz, 384kHz MQA Studio or MQA stream only apply for mini-i Pro 3

DSD 2.8MHz, 5.6MHz, 11.2MHz (DoP)

DSD 2.8MHz, 5.6MHz, 11.2MHz, 22.4MHz (Native)

Line input

RCA

SNR >-102dB A-weighting

THD+N <0.0025%@1k <0.0030%@20Hz-20kHz Frequency Response 20Hz-20kHz ± 0.2 -3dB@46kHz Channel

Crosstalk >-97dB

Input Level Max 2.0VRMS

The line output

XLR

SNR >-123dB A-weighting

THD+N <0.00027%@1k <0.00031%@20Hz-20kHz Frequency Response 20Hz-20kHz ± 0.1 -3dB@90kHz

Channel Crosstalk >-138dB

Output Level 4.1VRMS@0dB

RCA

SNR >-121dB A-weighting

THD+N <0.00045%@1k <0.00051%@20Hz-20kHz Frequency Response 20Hz-20kHz ± 0.1 -3dB@90kHz

Channel Crosstalk >-128dB

Output Level 2.0VRMS@0dB

Headphone output

TRS 6.35mm Definition

SNR >-116dB@2VRMS

THD+N <0.0006%@2VRMS

Frequency Response 20Hz-20kHz ± 0.1 -3dB@64kHz

Output Impedance <11 Ω

Output Power 1270mW@33 Ω 257mW@300 Ω 133mW@600 Ω 1%THD Gain +18dB

4.4mm Definition

SNR >-117dB@4VRMS

THD+N <0.0006%@4VRMS

Frequency Response 20Hz-20kHz ± 0.1 -3dB@64kHz

Output Impedance <22 Ω

Output Power 1900mW@33 Ω 950mW@300 Ω 510mW@600 Ω 1%THD Gain +24dB

High-Res Bluetooth

Sampling rate

PCM 16Bit/44.1kHz, 48kHz, 96kHz aptX/aptX HD/AAC/SBC/LDAC Bluetooth version Bluetooth V5.0
Operating distance 10-15m

Network

LAN:

10BASE-T/100BASE-TX

WLAN

2.4GHz/5GHz, IEEE 802.11b/g/n/ac standard only apply for mini-i Pro 3)

MA player Lite

Room Ready:

PCM 16-24Bit 44.1kHz, 48kHz, 88.2kHz, 96kHz

176.4kHz, 192kHz, 352.8kHz, 384kHz DSD 2.8MHz, 5.6MHz

AirPlay 2

PCM 16Bit 44.1kHz

Power supply

Power voltage:

230V position is fit for AC220V-240V 50/60Hz 115V position is fit for AC100V-120V 50/60Hz Standby power consumption < 2W

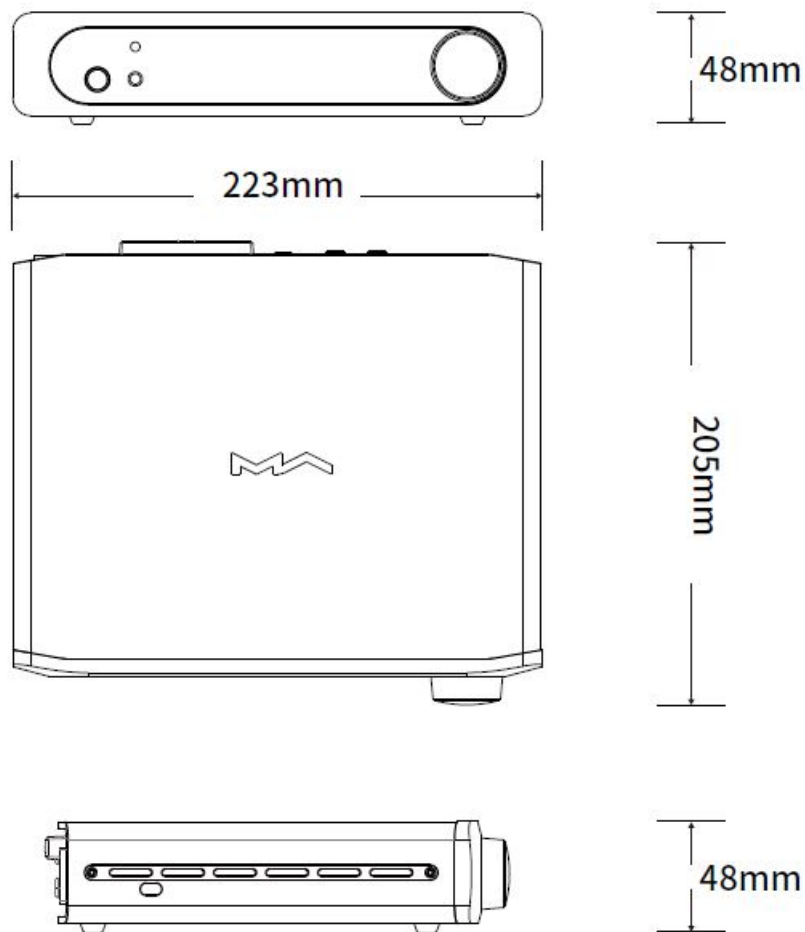
Other specifications

Weight 1.7kg

Dimension

223×205×48mm LxWxH including the protruding part

For improvement purpose, specifications subject to changes without prior notice.



Precautions

- This product is for indoor use only.
- For full ventilation, it is recommended to reserve a space of larger than 5 cm around the device.
- Do not cover the air vents with stuffs such as papers, tablecloths, and curtains to obstruct ventilation.
- Do not place stuffs with flame, such as lighted candles, on the device.- If the device is used in tropical areas, please be careful to prevent insects from entering the machine through the air vents.
- The device must not be subject to water droplets or splashes. Please do not place stuffs filled with liquids such as vases and cups on or near the device.
- Do not put stuffs around the device power plug and the AC power socket, in order to disconnect the power supply easily when needed.

The product with Hi-Res Audio logo is conformed to High-Resolution Audio standard defined by Japan Audio Society. This logo is used under license from Japan Audio Society. MQA and the Sound Wave Device have registered trade marks of MQA Limited. ©2016 Being Roon Ready means that Matrix network players transparently discover and connect to Roon without any configuration, and bit-per-fect audio is delivered from Roon to your network player.

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Documents / Resources



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Mini-i Series Music Streaming DAC