

Aurender N50 Quick Guide

English



 aurender

N50 Quick Guide

Product Warranty

Aurender products are warranted for 2 years from the date of purchase, including parts and technical support. However, damage caused by improper use, or unauthorized repairs and modifications will not be covered by the warranty, even within the warranty period. For technical support inquiries, please contact:

- Email: support@aurender.com

Precautions & Safeguards

Please read the following instructions carefully before setting up the N50.

- The super capacitor acts as an uninterruptible power supply. In case of any sudden power failures, the N50 will power itself down safely. Nevertheless, proper shut down procedure should be observed to turn off your N50 whenever possible.
- All devices should be turned off before connecting/disconnecting any power, analog, or digital interconnections.
- Only plug your Aurender into grounded plugs and grounded sockets.
- Do not drop the device to avoid internal damage.
- Do not disassemble the device. Doing so may cause inadvertent damage that would not be covered under warranty.
- Keep magnetic materials away from Aurender. HDDs and other internal electronics are subject to damage from magnetic interference.
- Do not expose device to oil, dust, water, high humidity, or smoke.
- Keep ventilation openings free from obstruction.
- When cleaning, use a soft, dry cloth. If stains remain, lightly dampen the cloth with water and gently wipe the unit with minimal pressure. Ensure any residual moisture is promptly wiped away to prevent water spots.
- All servicing must be performed by an authorized dealer or distributor. Otherwise, the warranty will be voided.
- Unplug power cord during severe lightning storms (after shutting down properly).
- Please note that a SSD/HDD can break down. Do not consider your Aurender the “Master” copy of your precious music library. Rather, maintain a separate master copy and consider your Aurender as a secondary backup copy. It is important to back up your music collection periodically to a separate memory device. In the event of drive failure, Aurender is not responsible for any loss of data. The drive manufacturer will only replace faulty drives under warranty and does not compensate for any loss of data.

Digital Transport

The N50 is a high performance digital audio transport. It features digital outputs only – there are no analog outputs on board this model. Pair this model with a high performance Digital-to-Analog Converter (DAC) for a complete digital front end solution.

DAC Compatibility

AES/EBU and SPDIF outputs/inputs are universally compatible. However, with USB, compatibility between any two devices is not always guaranteed. Sometimes, special drivers or software provisions must be made to establish compatibility over USB. DACs that fully adhere to the USB Audio Class 2 (UAC2) protocol will be supported without issue.

For DSD playback, if the DAC supports the industry standard DoP protocol, then it will be compatible with Aurender’s DSD output. DoP is a lossless, unadulterated transmission of DSD from source to DAC. It is NOT to be confused with DSD-to-PCM transcoding, which is usually less desirable from an audio performance perspective.

On some Aurender models, “Native” DSD output is available via USB. However, only a very small handful of select DACs support “Native” DSD input from a Linux-based source. Most DACs that support Native DSD input only work with ASIO drivers for Windows computers. Native DSD compatibility must be detected and enabled on a case-by-case basis.

In general, if a DAC works with a Mac computer without the need for any custom drivers, it will work well with Aurender servers as well. Consult your DAC manufacturer for confirmation of USB compatibility with a Linux-based sourced component like Aurender.

Product Components

- Aurender N50 Server Unit
- Aurender N50 Audio Unit
- Aurender N50 Power Unit
- SERVER Power Cable (A 600mm cable is provided by default, with an optional 1,500mm cable available)
- AUDIO Power Cable (A 600mm cable is provided by default, with an optional 1,500mm cable available)

- Data Cable (A 600mm cable is provided by default, with an optional 1,500mm cable available)
- AC Power Cord

Placement

- Place your device on a flat and stable surface.
- Keep away from heat sources, such as radiators.
- SERVER and AUDIO unit may be stacked or placed separately. Avoid placing other objects on top of the AUDIO unit especially.
- Allow space around the device for ventilation.
- Do not place inside an enclosed cabinet without ventilation.

Front Panel



1. Power On/Off, Standby Mode Button

With the AC switch on the rear in the ON position, simply press and release the front panel On/Off button to turn the Aurender on or off. The surrounding LED light will pulse while the unit is starting up or shutting down, and it will stop pulsing when fully turned on or off. Pressing and holding the On/Off button will trigger a forced shut down and this should be avoided.

We recommend leaving your Aurender on unless you experience frequent power outages, or will not be using it for a few days. Because you don't need to set a kind of "standby" mode, when you are finished with a listening session, no further action is required. Simply leave the Aurender in an idle state.

As with any computer, please avoid cutting power to the Aurender before properly shutting it down. Your Aurender needs to be shut down properly to avoid damage.

2. 8.8" Wide Front LCD Display

Front panel display preferences can be adjusted in the Conductor app in the "Front Display" section of the Settings menu. The display will automatically go dim after no playback or other activity has occurred for a period of 3 minutes.

3. Display Menu

Press the Display Menu button to cycle through various display options including Song Information and Playlist Menu. Playlists may be selected and played using the four buttons on the right side of the front panel display. Use the Previous (5) and Next (6) buttons to scroll between playlists. Use the Play/Pause (4) button to select a playlist. After the playlist is selected, press the Play/Pause button again to start playback.

4. Play/Pause button

Press to start or stop playback. Press and hold for 8 seconds to manually engage Remote Support mode for technical support.

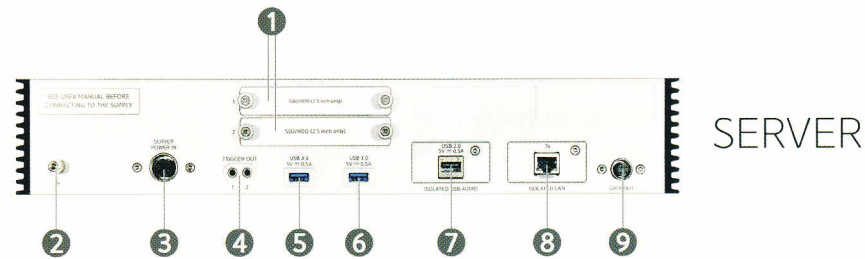
5. Previous button

Press to skip to the previous track.

6. Next button

Press to skip to the next track.

Rear Panel



SERVER UNIT

1. User-installable SSD/HDD Slots

The N50 is supplied without SSD/HDD installed. If it is your intent to import digital audio files into the N50, you will need to install the appropriate SSD/HDD first. Please refer to the “Recommended Hard Drive” and “Hard Drive Installation” section of the online Aurender System User’s Guide.

2. Earth Terminal (SERVER unit)

3. SERVER unit Power inlet from POWER unit

4. TRIGGER outputs(2 EA)

5~6. USB 3.0 Data Port 1~2

These USB data ports can be used to copy files from USB memory devices or for connectivity with compatible external control devices (e.g. dCS USB-to-RS232 dongle, MSB Pro ISL-to-Clock module, Constellation preamps, etc.). For best audio performance, these ports should not be used as USB audio outputs.

7. Dedicated proprietary isolated USB Audio Class 2.0 Output

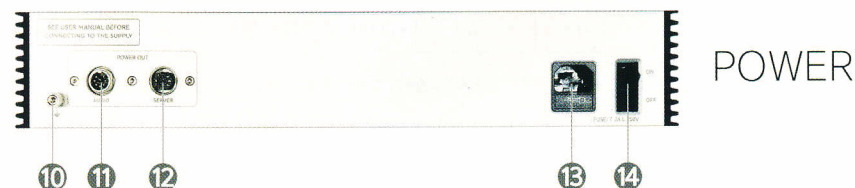
Aurender’s filtered and isolated USB port is designed to connect to asynchronous USB DACs.

8. Multiple Isolated Gigabit Ethernet Port

This model uses 7 transformers in the Ethernet port circuit for superior noise filtration without detrimental signal loss. The Aurender must be connected to your LAN via Ethernet (CAT5 or higher).

9. SERVER unit DATA Connector to AUDIO Unit

Use included data cable to connect SERVER unit to Audio unit’s Data input (24)



POWER UNIT

10. Earth Terminal (POWER unit)

11. Power Outlet to AUDIO Unit

12. Power Outlet to SERVER Unit

13. AC Power Socket

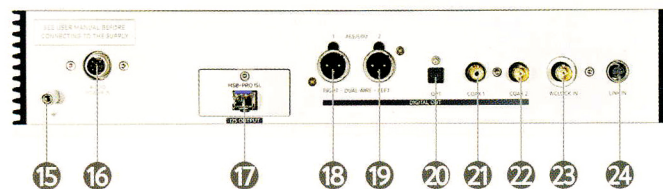
Connect an IEC AC Power cord to a grounded power source/outlet.

14. AC Power Switch

The rear panel power switch should be used to turn the unit off only after the unit has been shut down via the front panel On/Off button or via the app. The front panel On/Off button LED light will pulse while the unit shuts down. Once it is dimly lit after shut down procedure is complete, it is safe to flip the rear panel AC power switch to the “off” position. Because N50 has UPS circuitry inside, it will take some time for the unit to be fully discharged after the power switch is turned off.

Caution:

The power connectors linking the power unit to the server and audio units are not standard AC power connectors. These connectors are designed exclusively to supply AC power to the units that make up the N50 system. Therefore, the power outputs from the power unit must not be used to power any devices other than the components of the N50. Additionally, the power unit for the N50 cannot be purchased separately; all three units that comprise the N50 must be purchased together as a complete set.



AUDIO

AUDIO UNIT

15. Earth Terminal (AUDIO UNIT)

16. AUDIO unit Power inlet from POWER unit

17. I2S(Default, via HDMI-type connector) or MSB Pro ISL(Optional)

Users can choose between installing the MSB Pro ISL module and the I2S module

18. AES/EBU XLR Output 1 (RIGHT output in DUAL WIRE mode)

Connects to an AES/EBU XLR input of a DAC. Use 110 ohm AES/EBU cable.

19. AES/EBU XLR Output 2 (LEFT output in DUAL WIRE mode)

Connects to an AES/EBU XLR input of a DAC. Use 110 ohm AES/EBU cable.

20. TOSLINK Optical Output (SPDIF)

Connects to the optical input of a DAC. Use a TOSLINK optical cable.

21. Coaxial RCA Output (SPDIF)

Connects to a digital coaxial input of a DAC.

22. Coaxial BNC (SPDIF) Output

Connects to a digital coaxial input of a DAC.

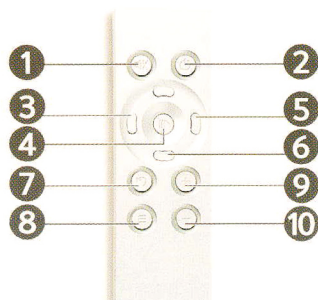
23. Coaxial BNC Word Clock Input

Connects to the BNC output of the master/word clock. Use a 75 ohm coaxial cable. Configure word clock input preferences in the "Advanced 2" section of the Settings menu.

24. AUDIO unit DATA Connector from SERVER Unit

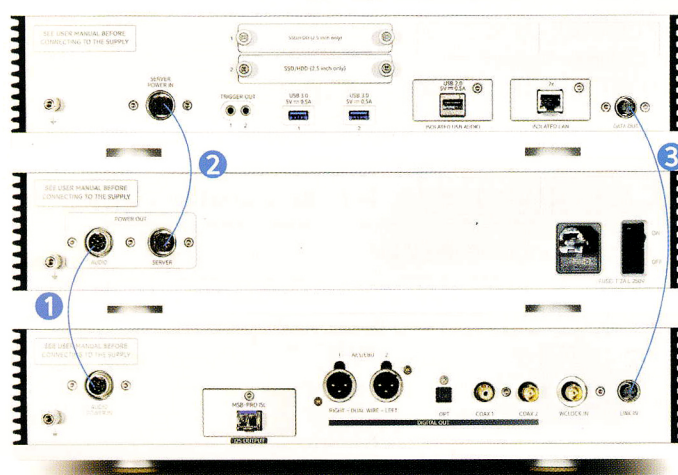
Use included data umbilical cord to connect AUDIO unit to SERVER unit's Data output (9)

Remote Control



1. Mute
2. Power ON/OFF
3. Play Previous
4. Play / Pause
5. Play Next
6. Output Select (toggle)
7. Input Select (toggle)
8. Display Menu (toggle)
9. Volume Up(For volume control of the Aurender DACs)
10. Volume Down(For volume control of the Aurender DACs)

Interconnection between Units



1. AUDIO Power Cable
2. SERVER Power Cable
3. AUDIO DATA Cable

Specifications

Physical Specifications

| | |
|---------------------|--|
| Dimensions & Weight | Dimensions: 16.9 x 3.8 x 14.0 in. x 3 modules, 430 x 96 x 353 mm x 3 modules Weight: 48kg (comprising three modules in total) |
| Material | Triple machined aluminum chassis |
| Front Panel Display | 8.8" 1920 x 480 wide IPS color LCD |
| Front Control Panel | Power, Mode, Play/Pause, Next Track, Previous Track |
| Remote Control | IR remote control |

Technical Specifications

| | |
|------------------------------|--|
| Power Supply | 1x80W(CPU Board) ,1x80W(Digital output board) – 2 Supreme audio-grade toroidal transformers |
| CPU | Intel quad core |
| RAM | 8GB |
| Library Storage Capacity | 2X 2.5" Compartment (User-installable storage) |
| SSD for System & Cache | 480GB NVME |
| Data USB Ports | 2X USB 3.0(Rear) |
| Software Suite | Aurender Conductor |
| Ethernet Port | 7-fold galvanically isolated Gigabit LAN module |
| Audio USB Ports | Fully galvanically isolated audio class USB 2.0 module |
| Uninterruptible Power Supply | Yes(Super Capacitors) |
| Power Consumption | Playback(40W), Peak(80W), Idle(3.5W) |

Audio Specifications

| | |
|---|--|
| Digital Outputs | USB Audio(Dedicated) Dual AES/EBU(OCXO Controlled) BNC Coax SPDIF(OCXO Controlled) RCA Coax SPDIF(OCXO Controlled) Optical/TosLink SPDIF(OCXO Controlled) 1x HDMI I2S module is installed by default (I2S module & MSB Pro ISL module are optional) |
| USB Output Supported Format | PCM up to 1,536kHz, DoP up to DSD512, up to DSD1024 native |
| SPDIF & AES/EBU Output Supported Format | PCM: Up to 32-bit / 192 kHz Dual-Wire AES/EBU: Up to 32-bit / 384 kHz DSD: Up to DSD64 Dual-Wire DSD128 via DoP |
| I2S out (I2S or MSB Pro ISL) | PCM up to 768kHz, DoP up to DSD256, up to DSD512 native |
| Master Clock Input | Coaxial BNC 75Ω – 10MHz, 12.8MHz, 44.1–48kHz (multiples (x1 to x512)) |
| MQA Support | MQA Core-decoder upgrade available |
| Compatible Formats | DSD (DSF, DFF), WAV, FLAC, AIFF, ALAC, M4A, APE and others |
| DSD-to-PCM Conversion | Up to DSD512 |

Caution

Caution: Risk of electric shock. Do not open.

Uninsulated “dangerous voltage” exists within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Precautions for Grounding and Power Connection

Before connecting any audio cables, first ensure that all devices are grounded using grounded plugs and grounded sockets. Also, all devices should be powered off before connecting audio or digital cables. If devices are not grounded, voltage differences between devices may cause voltage surges through audio cables, which can degrade and eventually damage sensitive circuitry in DAC or other devices.

Battery Precautions

Danger of explosion if battery is incorrectly replaced. To reduce risk of fire or burns, do not disassemble, crush, puncture, short external contacts, expose to temperature above 60°C (140°F), or dispose of in fire or water. Replace only with specified batteries.

Do Not Ingest Battery

Do not ingest battery. Chemical Burn Hazard. 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.