

# NEO iDSD 3 User Manual\_Ver0.01



# *NEO iDSD 3*

## User Manual

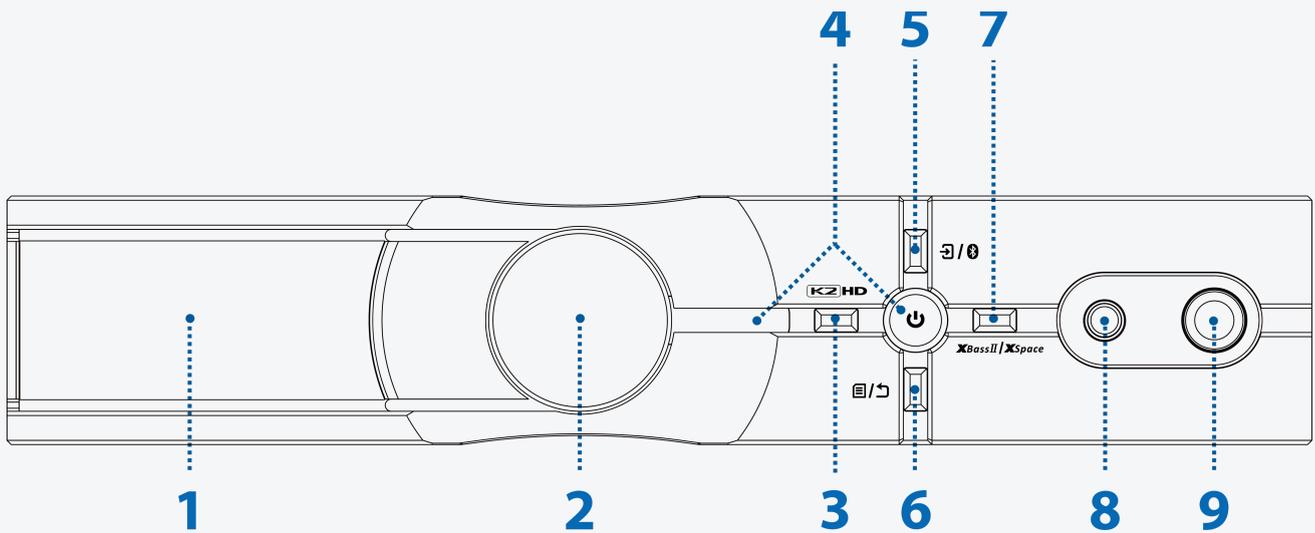
**Thank you for purchasing the NEO iDSD 3.** The NEO iDSD 3 is a balanced USB, S/PDIF and Bluetooth ultra-res DAC, preamplifier, and headphone amplifier.

Our NEO series has always pushed the limits of what compact audio components can achieve, combining purist design with the freedom to tailor your listening experience. The third generation is a celebration of this approach; critical hardware has been re-engineered for even greater musicality and playback accuracy, while software innovation continues with the inclusion of JVCKENWOOD's K2HD Technology.

The result is the NEO iDSD 3 - a versatile audio hub for headphones, speakers, and systems alike.

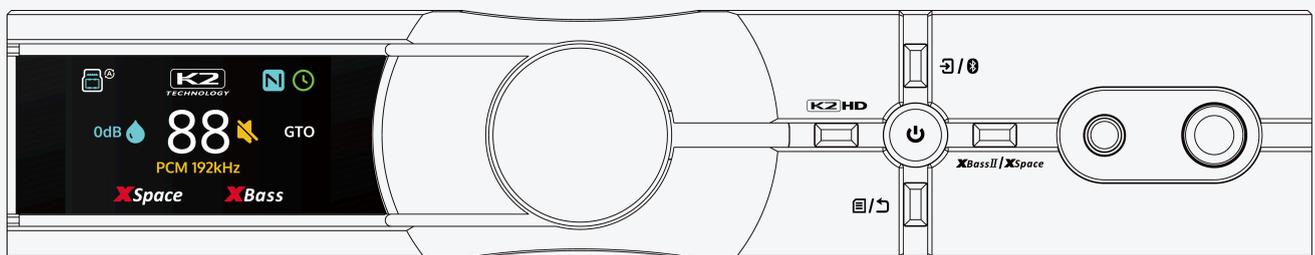
## FEATURES

- Versatile audio hub: DAC, preamp and headphone amp
  - Ultra-res digital audio – native 32-bit/768kHz PCM and DSD512 support
  - JVCENWOOD's K2HD Technology with selectable "K2" and "K2HD" modes
  - New operational amplifiers with extremely low THD performance
  - Upgraded polymer capacitors for cleaner power with high ripple tolerance
  - Improved line input – now RCA for enhanced compatibility
  - Upgraded WIMA MKS2 series capacitors for lower distortion and smoother high-frequency response
  - Bluetooth 5.4 connectivity with aptX Lossless, aptX Adaptive, LDAC, LDHC/HWA, and more
  - PureWave fully balanced dual-mono circuitry design for ultra-low distortion
  - >2,532mW RMS output power drives the toughest headphone loads
  - Four gain settings to suit all IEM and headphone types
  - XSpace and XBass II – adjustable soundstage and frequency response to match your headphones
  - iPower 2 included – audiophile-grade DC power supply with Active Noise Cancellation
  - Position horizontally or vertically – 2-inch colour display rotates to suit orientation
  - Over-the-air firmware updates and device control via iFi Nexis mobile app
-



## 1. TFT Display

The TFT display shows the current selected input, gain mode, XBass, XSpace, volume level, Nexis app connection, Clock Sync connection, audio format, sample rate, 'K2' mode and digital filter.



*Tip: The TFT display should be on the left-hand side when NEO iDSD 3 is positioned horizontally, and at the top when positioned vertically.*

## 2. Multi-Function Dial

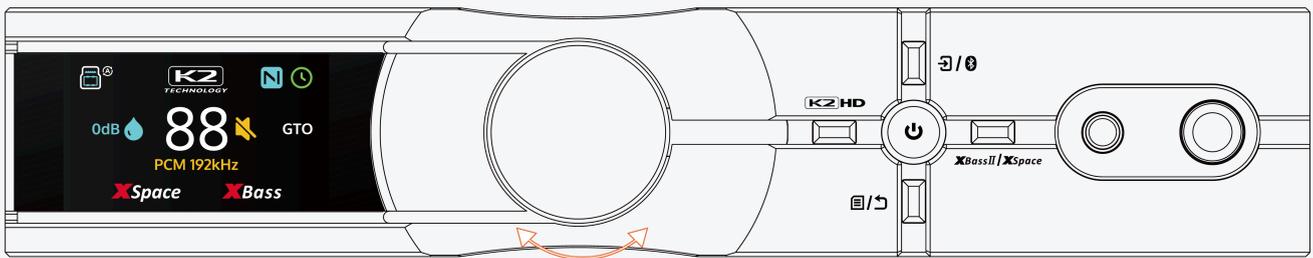
Controls:

- Analogue Volume Control (Turn)
- Mute (Short Press)
- Settings Menu Control (Turn)

- Adjust/Confirm Selection (Short Press)

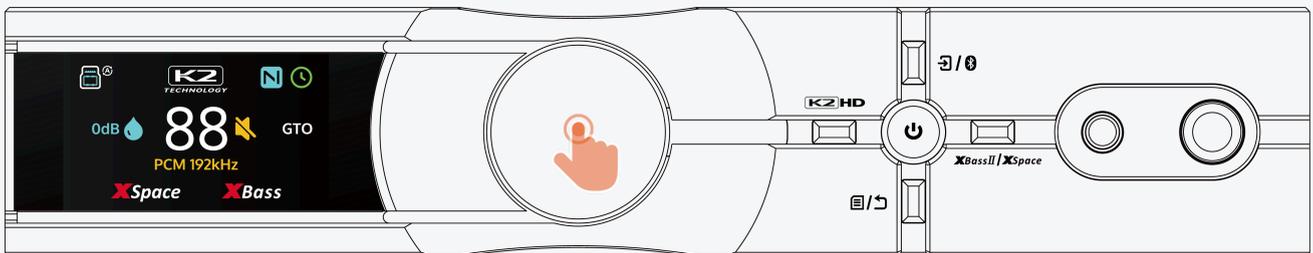
## Analogue Volume Control

Rotate the multi-function dial to change the volume. The analogue volume control in the NEO iDSD 3 allows precise volume adjustment without reduction in digital audio resolution, preserving audio detail for superior performance compared to any digital volume control.



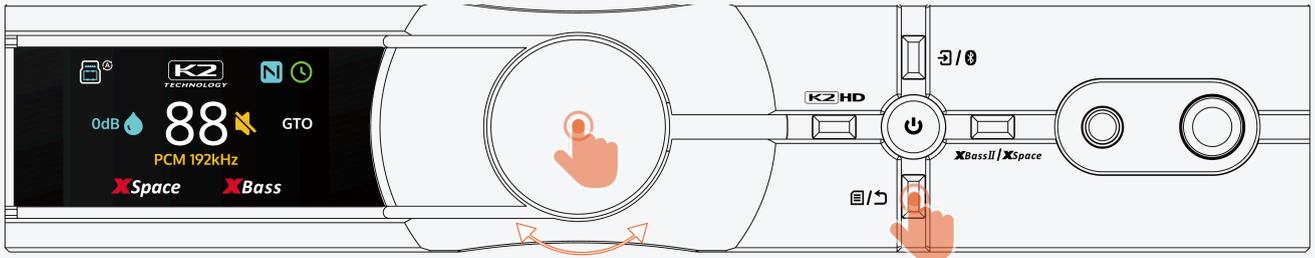
## Mute/Unmute

Press the multi-function dial to mute. To unmute, press it again or turn it.



## Settings Menu Control & Adjust/Confirm Selection

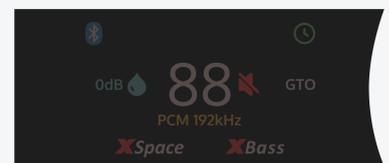
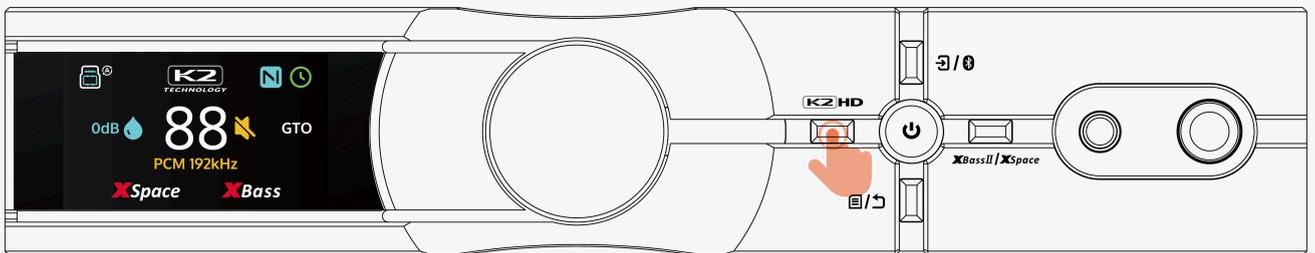
Short press the Settings Menu button to enter the Settings Menu. Turning the rotary dial switches the menu functions, and pressing confirms or switches the selection. Refer to section (6) of this user manual for details of available menu options.



### 3. K2HD Technology Mode Selection

The NEO iDSD 3 incorporates JVCKENWOOD's K2HD Technology, designed to enhance sound quality by restoring altered or degraded digital audio. This processing brings the sound closer to the quality of the original master recording.

Short press the K2HD button to select between the following options:



Off

K2 Mode

Features



This is the collective term for JVCKENWOOD's K2 Technology, used here to denote K2 technology processing without upsampling.

The audio format supported by 'K2' mode is PCM with a sample rate of 44.1-96kHz. When the audio sample rate exceeds PCM 96kHz, 'K2' mode is not applicable, and will be switched to 'K2HD' mode automatically.

---

The audio format supported by 'K2HD' mode is PCM with a sample rate of 44.1-192kHz. K2HD mode can also upsample audio files below PCM 176.4kHz to 176.4/192kHz.



'K2HD' mode is not compatible with the native DSD audio file format, 'K2HD' mode cannot be enabled while native DSD audio files are being played.

'K2HD' mode utilises GTO upsampling.

*Tip: When 'K2' mode is enabled, it will automatically switch to 'K2HD' mode when the audio sample rate is >96kHz. When the audio sample rate is ≤96kHz, it will automatically resume 'K2' mode.*

*Tip: 'K2HD' mode utilises GTO digital filter upsampling. When 'K2HD' mode and the GTO filter are enabled at the same time, the sample rate applied by the GTO filter is 176.4/192kHz. When the audio sample rate exceeds 176.4/192kHz, the digital filter will automatically switch to Bit-Perfect and 'K2HD' mode will be disabled. When the audio sample rate is ≤176.4k/192Hz, 'K2HD' mode is automatically restored.*

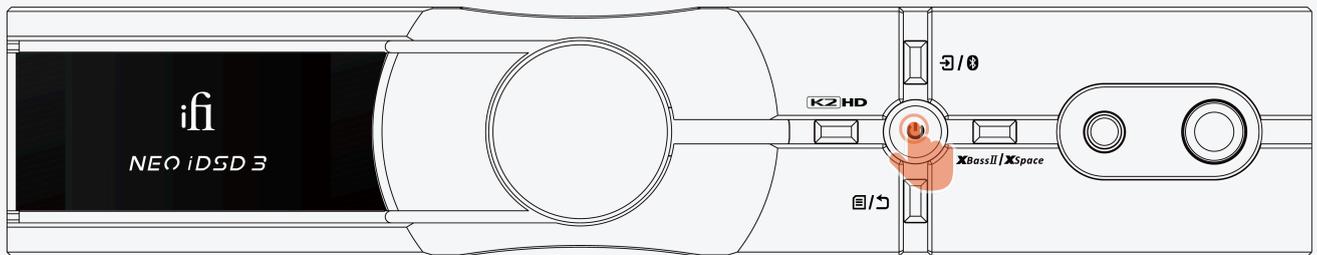
*When 'K2' mode and the GTO filter are enabled at the same time, 'K2' mode will be automatically switched to 'K2HD' mode, and the sample rate applied by the GTO filter is 176.4/192kHz. When the audio sample rate exceeds 176.4/192kHz, the digital filter will automatically switch to Bit-Perfect and 'K2HD' mode will be disabled. When the audio sample rate is ≤176.4k/192Hz, 'K2HD' mode is automatically restored.*

*When 'K2' mode or 'K2HD' mode are not enabled, the sample rate applied by the GTO filter is 352.8/384kHz.*

*\*"K2 TECHNOLOGY" and "K2HD" are trademarks or registered trademarks of JVCKENWOOD Corporation."*

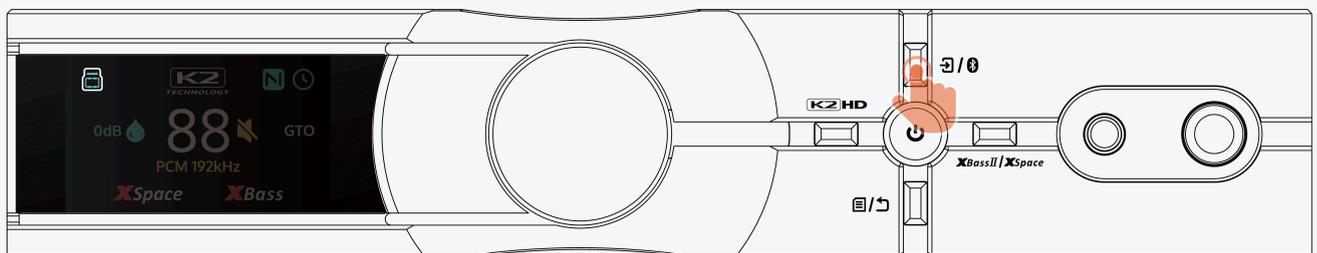
## 4. Power On/Off

Long press  $\geq 2s$  to switch the NEO iDSD 3 on or off.



## 5. Input Selector/Bluetooth Pairing

Short press to cycle between input options. The following input options are available:



**USB**



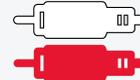
**Bluetooth**



**Coaxial**



**Optical**



**Line In**



**Auto**

*Note: Please select the input channel according to your audio source. For example, when using USB input, you need to switch the input channel to "USB".*

*Note: When Auto mode is selected, the input signal is detected and the input channel is automatically switched.*

*The NEO iDSD 3 receives Bluetooth signals via aptX Lossless, aptX Adaptive, aptX, LDAC, LHDC/HWA, AAC and SBC.*

## Bluetooth Pairing

When the Bluetooth input is selected, the Bluetooth icon in the display will repeatedly blink twice and search for a previously paired device. If a stored device is not found, it will automatically enter pairing mode and flash.

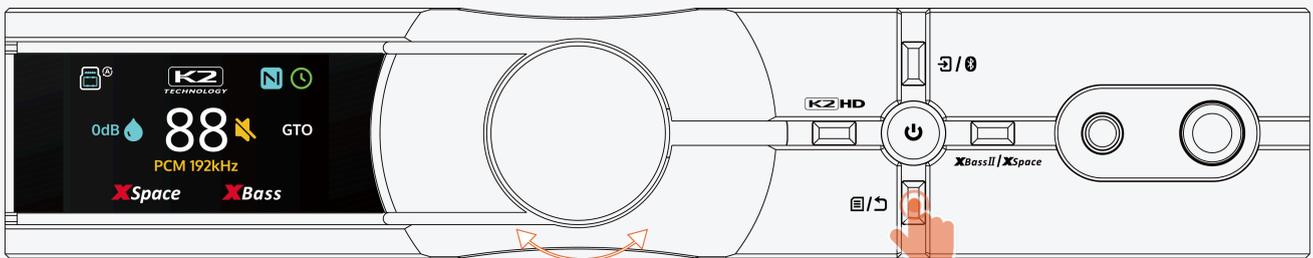
To manually enter Bluetooth pairing mode, press and hold the Bluetooth pairing button ( $\geq 3s$ ). When pairing mode is active, the Bluetooth icon will flash repeatedly. To pair, find the 'iFi Lossless Audio' Bluetooth device on your audio source device such as a mobile phone.

The NEO iDSD 3 can store up to 8 paired Bluetooth devices. To delete all previously stored devices, please perform a factory reset - see section (6-IX) for details.

## 6. Enter/Exit Settings Menu

Short press to enter the Settings Menu. Rotate the multi-function dial to cycle between the options available for each setting. The following settings are available:

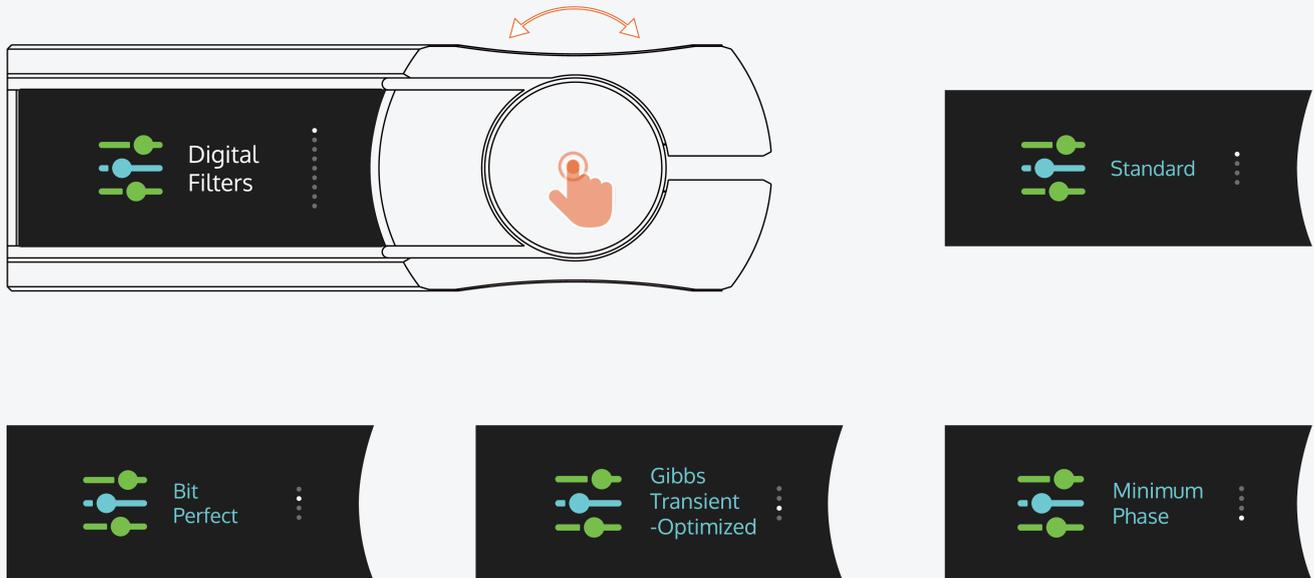
- Digital Filter
- Gain
- Volume Sync
- Bluetooth Voice Prompt
- Clock Sync
- Line Out Volume Control
- Brightness
- Factory Reset
- About



*Note: Rotate the multi-function dial to select the function, then short press to confirm your selection or toggle the setting on or off. If there is no operation within 10 seconds, the display will return to the home screen.*

## I) Digital Filters

The following 4 digital filters are available:



### Filters

### Features

Standard

Modest filtering, modest pre and post-ringing

Bit-Perfect

No digital filtering, no pre or post-ringing

GTO (Gibbs Transient-Optimised)

Upsampled to 352.8/384kHz, minimum filtering, no pre-ringing, minimum post-ringing

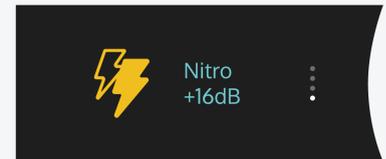
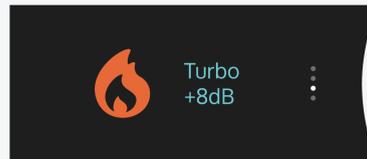
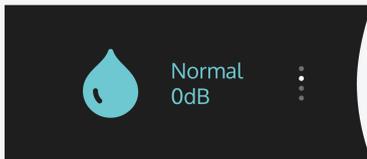
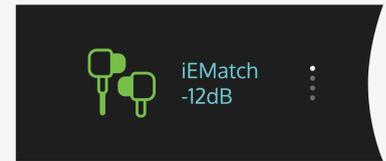
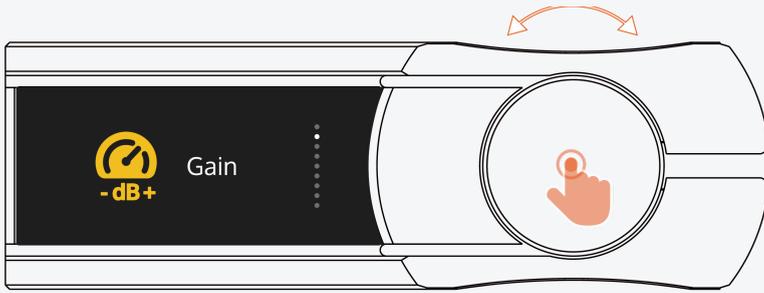
Minimum

Minimum phase, slow roll-off, minimum pre and post-ringing

*Note: If the GTO filter is selected, the display will indicate a sample rate of 352.8kHz or 384kHz, illustrating the upsampling operation of this filter.*

## II) Gain

Cycle between Gain Modes. The following 3 gain modes are available:



**iEMatch**  
**-12dB**



**Normal**  
**0dB**



**Turbo**  
**+8dB**



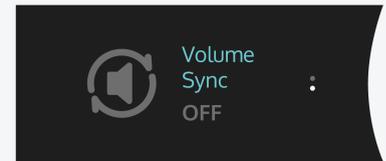
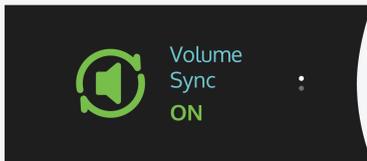
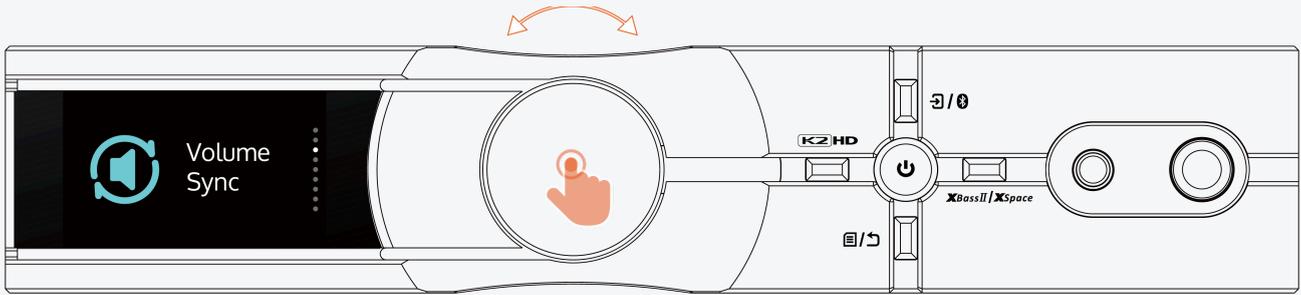
**Nitro**  
**+16dB**

*Note: Always start from 0dB and then increase the gain level gradually, to attain an enjoyable and comfortable level of volume from your headphones or speakers.*

*Warning: Using excessive gain can result in damage to connected headphones, and/or permanent hearing damage. AMR/iFi audio is not responsible for any damage/injury resulting from misuse of this device.*

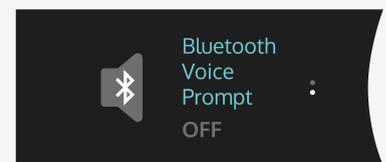
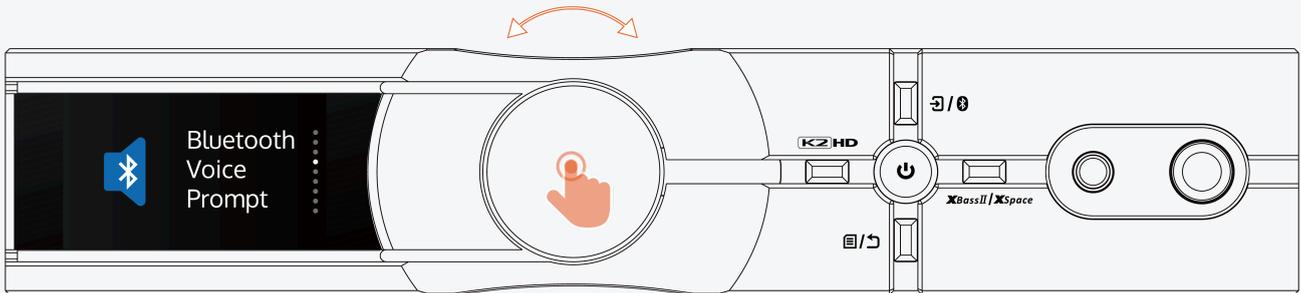
### III) Volume Sync

This setting turns volume sync functionality on or off. The default setting is 'OFF'.



#### IV) Bluetooth Voice Prompt

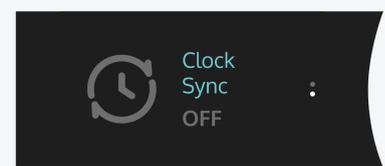
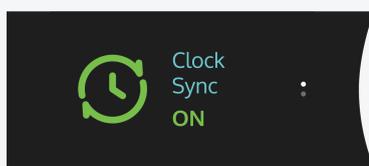
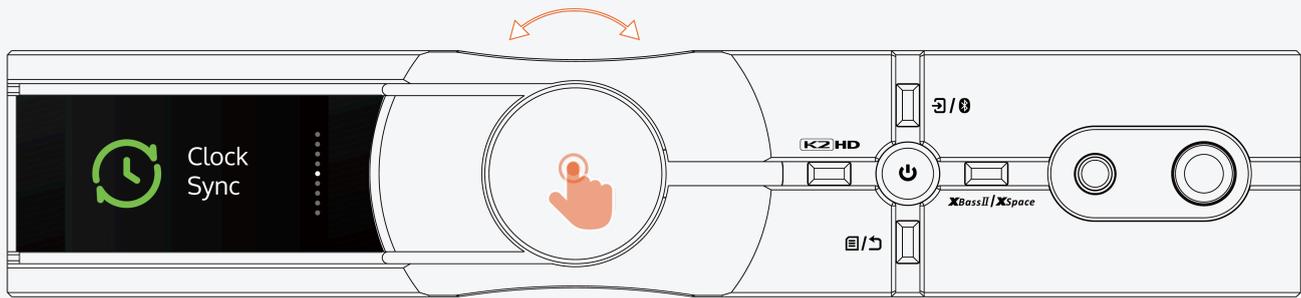
This setting turns Bluetooth voice prompt functionality on or off. The default setting is 'ON'.



#### V) Clock Sync\*

This setting turns 10MHz External Sync Clock input (13) functionality on or off. The default setting is 'OFF'.

To use an external clock input, set this to 'ON'. For more information on external clocking, refer to section (13).



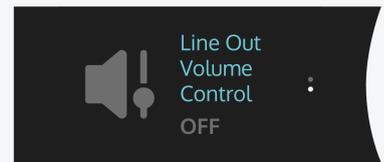
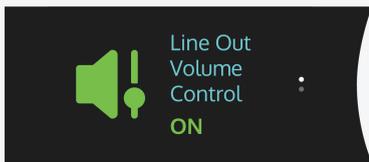
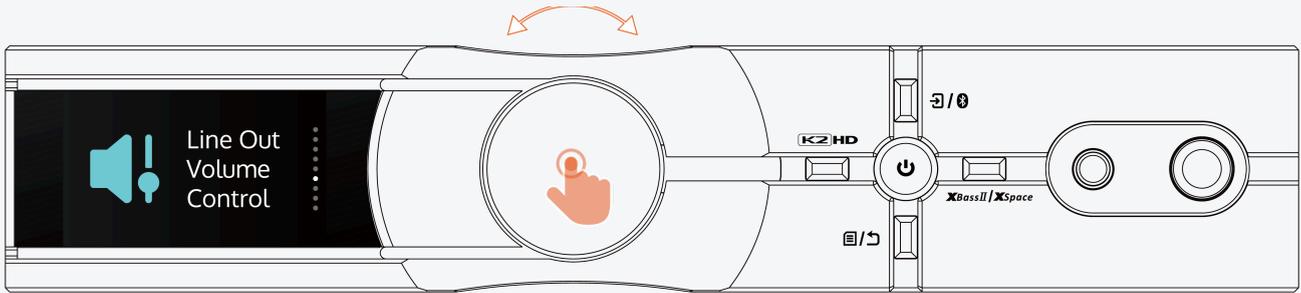
When set to 'ON', the NEO iDSD 3 will automatically detect the clock signal and a clock detection prompt message will appear on the display. If no input or output 10MHz clock signal is detected, or the external clock signal is incorrect, the NEO iDSD 3 will automatically switch back to the internal clock.

The auto-detect clock signal will not switch off, it will continue and a red clock icon will appear on the display.

## VI) Line Out Volume Control

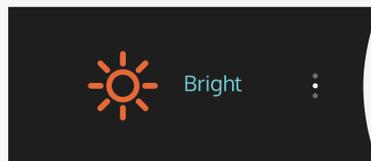
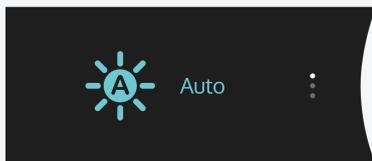
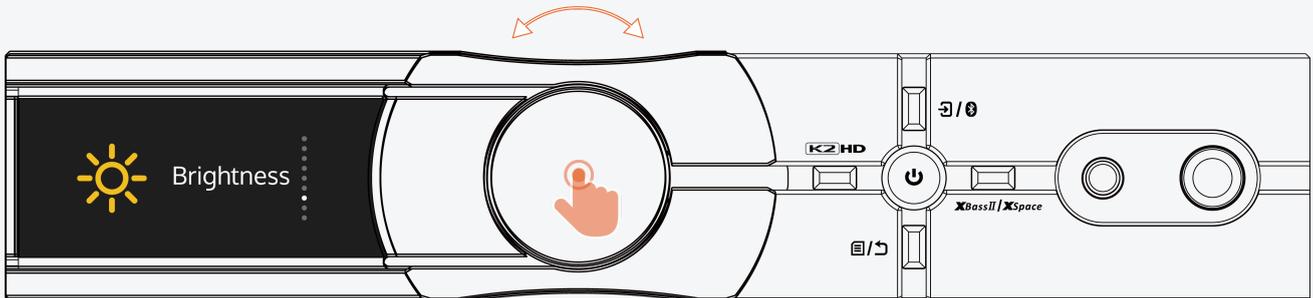
This setting will turn the line output volume control functionality on or off. The default setting is 'OFF'.

To use line output volume control, set this to 'ON'. This mode will determine whether the NEO iDSD 3 analogue line output section volume control is used.



## VII) Brightness

This setting controls the TFT display screen brightness. The default setting is 'Bright'.

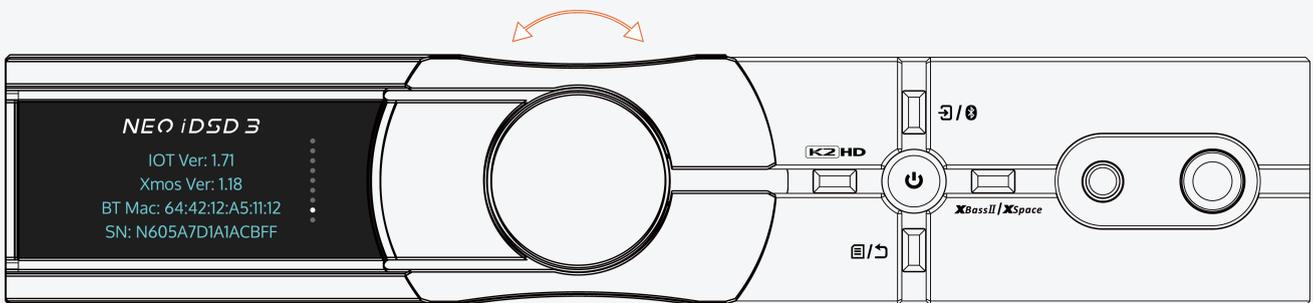


Short press the dial to enter brightness mode selection, turn the dial to choose a setting, then short press to confirm.

- Auto** Auto sleep mode. If no operation is performed within 10s, the display will turn off.
- Bright** The display brightness always remains bright.
- Soft** The display brightness always remains soft.

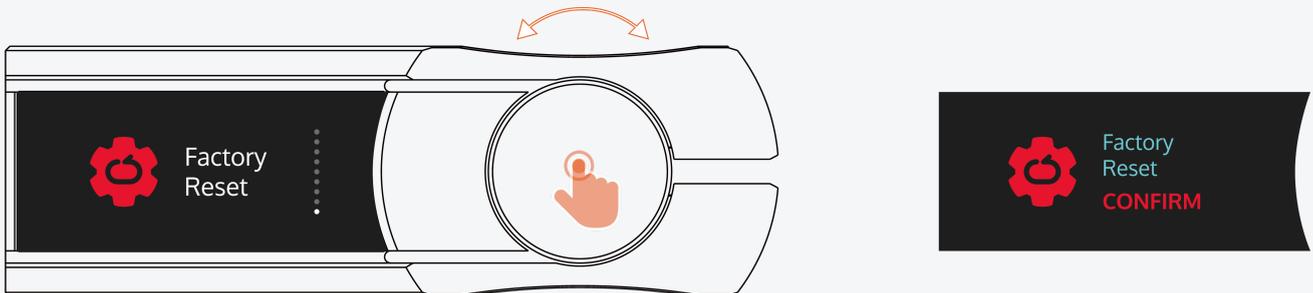
### VIII) About

View the device name and the current firmware version number.



### IX) Factory Reset

Select "CONFIRM" to perform a factory reset. The iFi logo will appear on the screen and the device will reboot after a successful operation.



*Warning: Factory reset will delete all stored Bluetooth pairings, and restore the following default settings: digital filtering to BP, Bluetooth voice prompt on, default screen brightness high, default input channel USB, default volume 68dB, default gain 0dB, default XBass and XSpace off.*

## 7. **XBass II** Selection and **XSpace** Matrix On/Off

### **XBass II** Selection (short press $\leq 1s$ )

Cycle through the three XBass II modes to select:

**Off** > **XBass** > **XBass** > **XBass**  
**Off**                      **XBass**                      **Presence**                      **XBass + Presence**

XBass II is an analogue circuit designed to restore bass response lost in open-back headphones, for more accurate reproduction of the original music. Our presence adjustment pushes the mid presence toward the listener for more forward sounding vocals. Listeners can also combine these two processing options.

### **XSpace** Matrix On/Off (long press $\geq 2s$ )

The **XSpace** Matrix creates a spacious sound field for headphones.

XSpace is a purely analogue signal processing circuit designed to replicate the experience of listening with speakers for headphone listening. This addresses the 'music inside the head' sensation, which some listeners can find distracting or uncomfortable.

*Tech Note: Research into headphone frequency response shows that a purely flat response may not give the best results. Our XBass circuitry is designed to better fit the profile of the low-frequency correction required. However, research also shows that a certain amount of upper midrange boost is needed to give many headphones a more 'natural' sound.*

*This upper midrange region is usually called the 'presence' region, and we have used this term to indicate the upper midrange correction. In the NEO iDSD 3, XBass II can be selected to have either Bass + Presence correction, only Bass, or only Presence correction.*

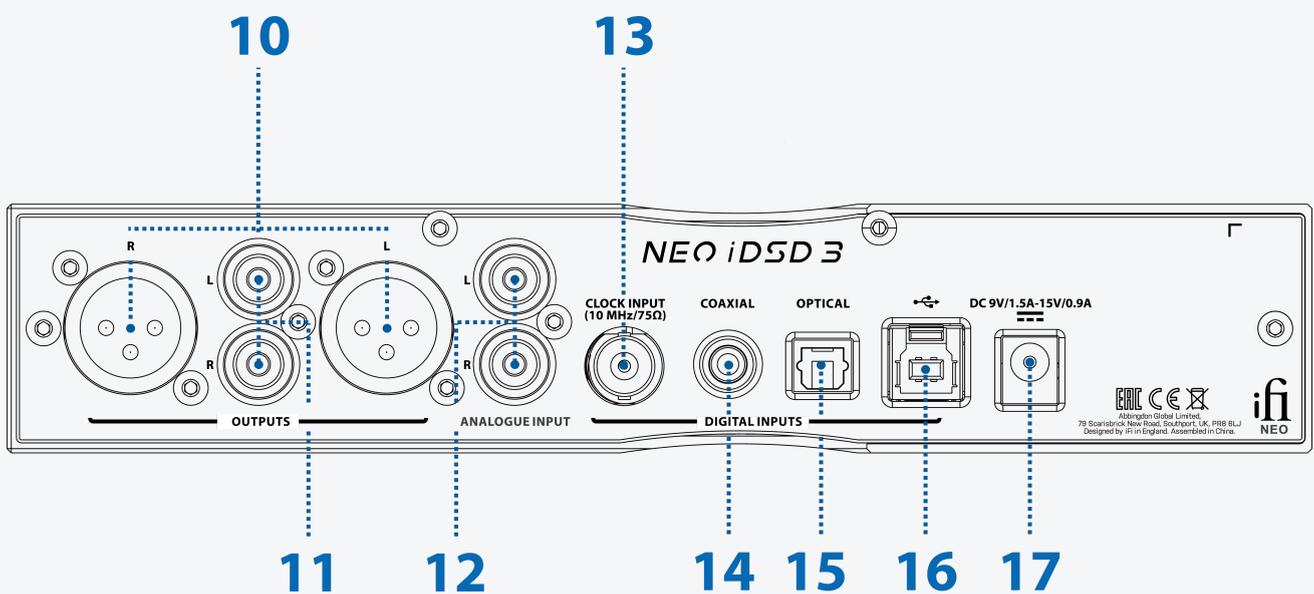
*Note: Sonically-hindering DSP is NOT used for XBass II nor XSpace matrix systems. They use the highest-quality discrete components and operate purely in the analogue domain, ensuring all the clarity and resolution of the original music is retained.*

## 8. **Balanced 4.4mm Headphone Output**

Use this connection for balanced 4.4mm headphones.

## 9. Single-Ended 6.3mm Headphone Output

Use this connection for 6.3mm single-ended headphones. Please use a 3.5mm to 6.3mm adapter for 3.5mm single-ended headphones.



## 10. Balanced XLR Analogue Line Output

Use this connection to send audio via balanced XLR cables to active speakers or an amplifier.

## 11. Single-Ended RCA Analogue Line Output

Use this connection to send audio via single-ended RCA cables to active speakers or an amplifier.

## 12. Single-Ended RCA Analogue Line Input

Use this connection to receive audio via single-ended RCA cables from an analogue audio source, such as a vinyl record player.

## 13. Clock Sync Input

Use this input to connect to a 10Mhz external clock source (Optional).

To use this feature, set External Sync Clock in the menu to On.

If no 10MHz clock is detected, or if there is an error in the external clock, the display will indicate an error and the NEO iDSD 3 will automatically switch back to its internal clock.

A sine or square wave signal may be used, 1Vpp nominal, 75Ω.

## 14. S/PDIF Coaxial Digital Input

Use this input to connect an S/PDIF source such as Apple TV, Google Chromecast, PS5, a high-end CD transport, etc.

## 15. S/PDIF Optical Digital Input

Use this input to connect an S/PDIF source such as Apple TV, Google Chromecast, PS5, a high-end CD transport, etc.

## 16. USB Audio Input

Use this input to connect to any USB-compatible source device, such as computers and network streamers. This is a USB 3.0 Type-B input, but is also USB 2.0 compatible. We recommend using the included USB 3.0 cable where possible.

*Tip: Where possible, it is preferable to use a USB 3.0 port instead of a USB 2.0 port.*

*Note: For use with Windows devices, we strongly recommend downloading the latest driver for best performance.*

*Tip: For all latest firmware updates please refer to our website here: <https://downloads.ifi-audio.com/support/download-hub/>*

## 17. DC Power Supply Connection

The NEO iDSD 3 requires a DC 9V/1.5A, 12V/1.2A, or 15V/0.9A\* power input. Please connect the NEO iDSD 3 to the included power supply.

*\* Any connected power supply must be able to deliver the exact specified voltage, and the minimum relevant amperage for that voltage.*

### *Set up your NEO iDSD 3 using our iFi Nexis App*

Please search for "NEO iDSD 3" within the iFi Nexis app.

The iFi Nexis app helps you to use all the features and settings of the NEO iDSD 3, such as OTA updates\*, remote control\*\* and more.

*\*OTA, or Over The Air download technology, allows users to download firmware update packages and complete updates directly over the network.*

*\*\*Provides users with a convenient and easy-to-use way to control their device as an alternative to the traditional remote control, for adjusting all the functions and settings of the NEO iDSD 3 more easily, conveniently and freely. The iFi Nexis app connects to it via either Wi-Fi or Bluetooth (selectable in the app).*



"iFi Nexis"



**Download the Nexis app for added features and future updates**

Waiting for  
QR



**Scan the QR code to view the official iFi audio NEO iDSD 3 video on YouTube.**

## Cautions

1. Avoid extreme heat, cold and humidity.
2. Avoid dropping or crushing the NEO iDSD 3.
3. If you experience discomfort or pain while listening, try lowering the volume or discontinuing use temporarily.
4. Always check the actual output volume on your earphone, headphone, or loudspeakers before playing audio, as many operating systems and software-based music players do not appropriately apply industrial standards governing volume control (e.g., USB Device Class Definition for Human Interface Devices). If in doubt, before playing any music, turn off Volume Sync on the NEO iDSD and bring the volume down to the lowest setting.

*Warning: To prevent potential hearing damage, do not listen at high volume levels for long periods.*

## Prolonged Heat Exposure

Your NEO iDSD 3 may become very warm during normal use. It is important to keep it on a hard, stable, and well-ventilated surface when in use.

## SPECIFICATIONS

### Digital Stage

#### Hi-Res Support

PCM 768kHz

DSD 512 / 22.6MHz

#### Bluetooth Formats

aptX Lossless, aptX Adaptive, aptX\*\*, LDAC\*, LHDC/HWA, AAC, SBC

### Analogue Stage

#### Line Outputs

XLR 19.5V max. (variable); 4.4 V (fixed)

RCA 10.5V max. (variable); 2.2V (fixed)

#### Output Impedance

XLR  $\leq 102\Omega$

RCA  $\leq 51\Omega$

**SNR**  $\geq 120\text{dB(A)}$  @ 0dBFS

**DNR**  $\geq 120\text{dB(A)}$  @ -60dBFS

**THD+N** <0.0015% @ 0dBFS

## Headphone Outputs

### Output Level

Balanced 4.4mm 3.5V/19.5V Max. (12Ω - 600Ω)

Single-Ended 6.3mm 4.5V/9.5V Max. (12Ω - 300Ω)

### Max Output Power

Balanced 4.4mm >19.5V/650mW (@ 600Ω); >13.3V/5551mW (@ 32Ω)

Single-Ended 6.3mm >10.5V/184mW (@ 600Ω); >9.5V/2832mW (@ 32Ω)

### RMS Output Power

Balanced 4.4mm >12.7V/2532mW (@ 64Ω)

Single-Ended 6.3mm >8.4V/2244mW (@ 32Ω)

**Output Impedance** ≤1Ω, Enable iEMatch ≤7Ω

**SNR** ≥120dB(A) (3.3V 6.3mm/6.2V 4.4mm)

**DNR** ≥120dB(A)

**THD+N** <0.0015% (125mW @ 32Ω)

## General

**Power Supply Requirement** DC 9V/1.5A - 15V/0.9A (centre +ve)\*

**Power Consumption** No signal ~5W; Max signal ~13.5W

**Dimensions** 214x158x41mm (8.4"x6.2"x1.6")

**Net Weight** 916g (2.0lbs)

**Limited Warranty** 12 months\*

*\*A power supply unit must be able to deliver minimum rated repetitive current*

*\*12 months typical or as permitted/required by local reseller laws.*

*\*\*Specifications are subject to change without notice.*

*\*LDAC and the LDAC logo are trademarks of Sony Corporation.*

*\*Qualcomm aptX and Snapdragon Sound are products of Qualcomm Technologies, Inc. and/or its subsidiaries.*

*\*Qualcomm, Snapdragon and Snapdragon Sound are trademarks or registered trademarks of Qualcomm Incorporated. aptX is a trademark of Qualcomm Technologies International, Ltd.*