

# ZEN CAN 3 User Manual\_Ver1.1



ZEN CAN

## User Manual

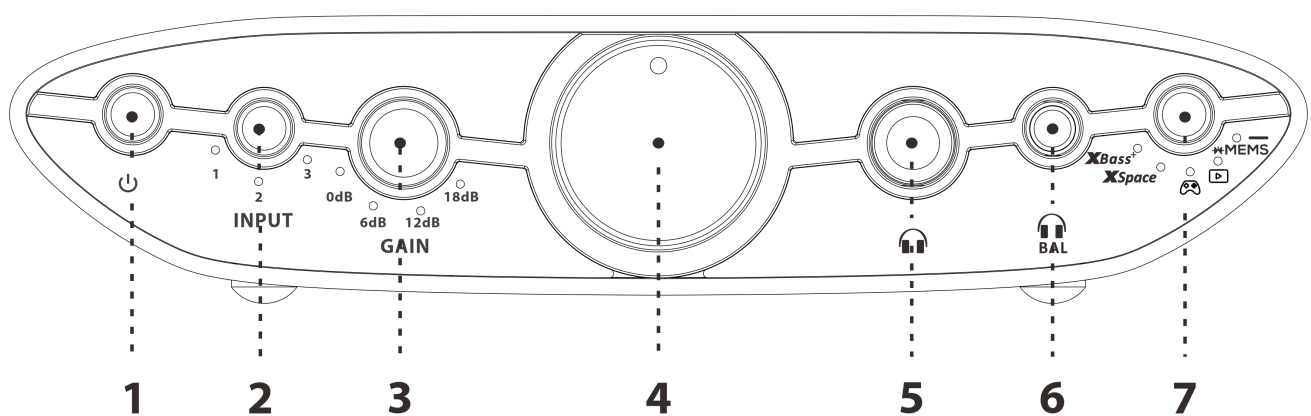
**Thank you for purchasing the CAN 3 from the ZEN series.** The ZEN CAN 3 is a balanced audio amplifier.

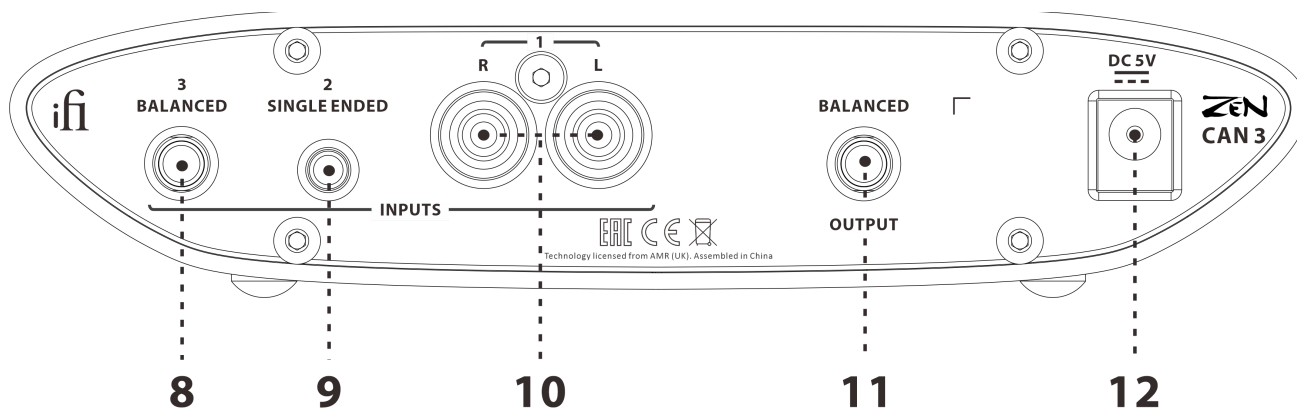
Supercharge your premium headphones with the **ZEN CAN 3**, offering a max. 2,000mW headphone output power and supporting future-proof, next-gen xMEMS solid-state micro-speaker technology. Say goodbye to feeling underpowered and embrace every detail with clarity. Additionally, it offers five EQ modes, including the renowned XBass for deep, chest-thumping bass, XSpace for an expansive sound field, a new Game mode to amplify subtle sounds for detecting approaching enemies, and a new Movie mode that enhances dialogue clarity. The ZEN CAN

operates in Class A with typical headphones, transitioning to Class AB only when demanding more power is needed. The ZEN CAN 3 is the perfect companion for your desktop head-fi system.

## FEATURES:

- Features 4.4mm Balanced and 6.35mm Single-Ended headphone outputs, delivering up to 2,000mW of power for compatibility with a wide range of headphones and earphones
- Supports xMEMS micro-speaker technology, ensuring compatibility with future earphone models.
- Tailor your sound with five EQ modes:
  - XBass+: Restores lost bass for accurate low frequency reproduction
  - XSpace: Enhances the audio by creating a spacious sound field
  - XBass+ and XSpace: Combines bass and spatial enhancement for immersive sound
  - Game: Enhances low-level sound effects, enabling you to hear approaching enemies and environmental nuances clearly
  - Movie: Enhances dialogue clarity during film and TV shows
- Pure analogue circuitry, free from DSP (Digital Signal Processing), delivers smoother and fuller sound

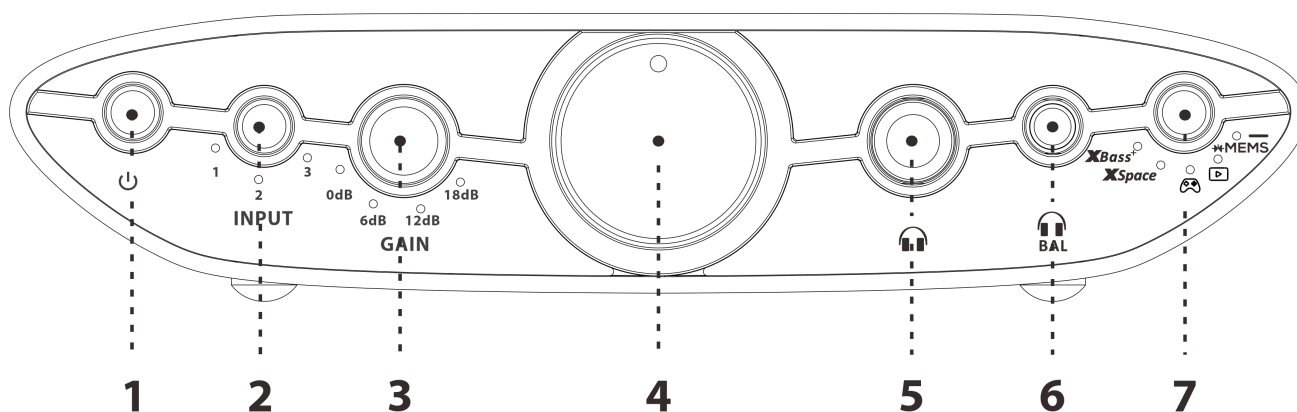




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## SPECIFICATIONS:



## 1. Power switch

Power switch, short press to switch on/off.

## 2. Input channel selection

Use the button to choose between the following input options:

Input 1: RCA (See item 8)

Input 2: Single-Ended 3.5mm (See item 9)

Input 3: Balanced 4.4mm (See item 10)

## 3. Gain selection: 0dB/6dB/12dB/18dB

For the best experience, please adjust and increase the gain as much as possible starting from the lowest gain of 0dB in order to get a pleasant and comfortable volume from the headphones.

*Tip: For normal listening standards, the volume should be controlled between 10 and 2 o'clock, if the volume is not satisfactory, turn up the gain appropriately.*

*Tip: With a new pair of iEMs/Headphones, ALWAYS start with the volume no higher than 9 o'clock and with the Gain selection (item 3) set to '0dB'.*

*Warning: Start off with a low gain setting to reduce risk of damage to your headphones or your hearing. AMR/iFi audio is not responsible for any hearing or equipment damage from misuse.*

## 4. Analogue volume control

Turn the dial to control the volume. The analogue volume control of the ZEN CAN 3 is superior to any digital volume control.

*Warning: Due to the high power of the ZEN CAN 3, always start off at a low volume level so that there is no risk of damage to your headphones or your hearing. iFi audio is not responsible for any hearing or equipment damage from misuse.*

## 5. Single-Ended 6.35mm headphones output

Connection for 6.35mm unbalanced headphones. Please use a 3.5 to 6.35mm adaptor for 3.5mm Single-Ended headphones.

## 6. Balanced 4.4mm and xMEMS headphones output

Connection 4.4mm balanced headphones.

See the next section for instructions on using the xMEMS headphones.

*Tip: As ZEN CAN 3 is balanced, we recommend the 4.4mm output.*

## 7. EQ Mode selection and xMEMS mode

**I) A short press on the function corresponding to the button will cycle as follows:**

Off > XBass+\* > XSpace\* > XBass+ + XSpace > Game > Movie (short press)

xMEMS (long press  $\geq$  2s)

*\*XBass+ was uniquely designed to extend bass response to suit different headphones. It is a pure analogue signal circuit.*

*\*The XSpace Matrix recreates a holographic sound field. It is a pure analogue signal processing circuit designed for listening to headphones as if one was listening to speakers. This addresses the 'music inside the head' sensation, which makes for unsettling listening.*

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

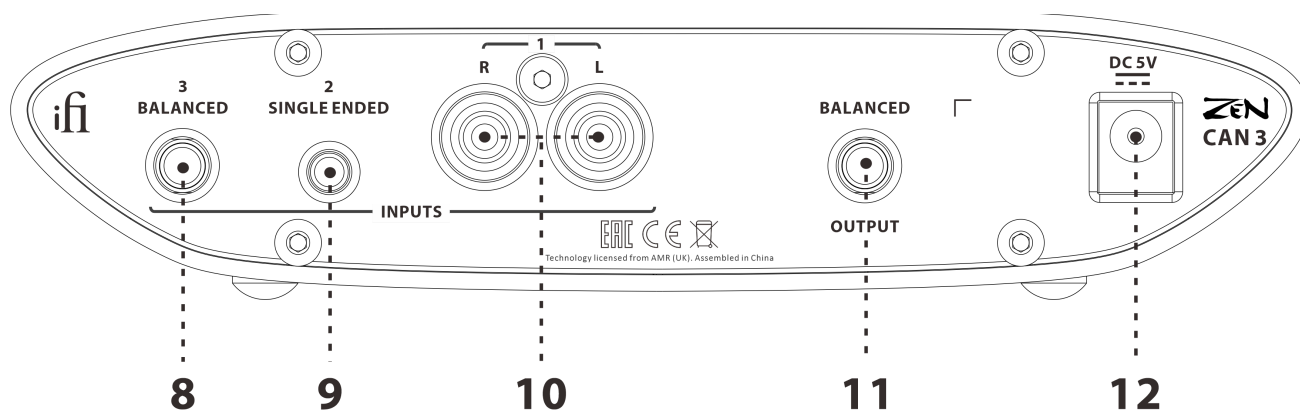
## **II) xMEMS Mode**

Long press  $\geq 2s$  to switch on/off the xMEMS mode, which is specially designed for xMEMS headphones. To use xMEMS headphones, please switch on xMEMS mode.

*Tip: xMEMS transducers are a piezoelectric technology that has specific drive requirements, and can only be used when xMEMS mode is on.*

*Warning: With xMEMS mode on, please connect xMEMS IEMs to the balanced 4.4mm headphone output only (item 6). It is not recommended to connect other types of headphones while xMEMS mode is on. To connect those, please turn off the xMEMS mode before connecting.*

*Tip: If the mode is used incorrectly, such as plugging xMEMS headphones into the balanced 4.4mm headphone port when xMEMS mode is not turned on, or plugging regular balanced 4.4mm headphones into the balanced 4.4mm headphone port when xMEMS mode is turned on, as we have implemented advanced circuit protection, the headphones will not be damaged, but it will result in distorted sound.*



## 8. Balanced 4.4mm line input

For connecting balanced analogue input.

*Tip: When xMEMS mode is engaged, the ZEN CAN 3's line input impedance is lowered. When using the xMEMS mode we recommend ensuring that the connected source device's output impedance is <10 ohms.*

## 9. Single-Ended 3.5mm line input

For connecting single-ended 3.5mm input.

## 10. RCA Analogue line input

For connecting analogue input.

## 11. Balanced 4.4mm analogue line output

This is an analogue output via 4.4mm > XLR or other balanced interconnects. You can use this to connect to active speakers or amplifiers that have a volume control.

*This port is disabled, (with no audio output) when the device is in xMEMS mode, and being used with xMEMS headphones*

*Tip: To use this balanced output with a single ended connection, please use the iFi 3.5mm to 4.4mm adapter (This adapter does not convert a single ended connector into a balanced one – the connection remains single*

ended).

*Tip: The rear 4.4mm line output has variable gain, so its volume is controlled by the volume knob. This lets the ZEN CAN 3 work as a preamplifier.*

## 12. DC 5V Power supply connection

The ZEN CAN 3 is powered by a 5V supply only. Please connect the ZEN CAN 3 to the enclosed power supply.

*Tip: For best performance upgrade the enclosed power supply to a super-low noise power adapter such as iPower2 5V or iPower X 5V.*

## SPECIFICATIONS:

### Analogue Input:

Balanced 4.4mm

Single-Ended 3.5mm

RCA L/R

### Max Input Level

Balanced 4.4mm

7.4V RMS

Single-Ended 3.5mm

1.92V RMS

RCA L/R

3.8V RMS

### Input impedance:

Balanced 4.4mm

$\leq 24\text{K}\Omega$  (4.0V nominal @ 0dBFS)

Single-Ended 3.5mm

$\leq 1\text{M}\Omega$  (4.0V nominal @ 0dBFS)

RCA L/R

$\leq 1\text{M}\Omega$  (4.0V nominal @ 0dBFS)

## Line Output Section

|                          |                                                             |
|--------------------------|-------------------------------------------------------------|
| <b>Line Output:</b>      | Balanced 4.4mm                                              |
| <b>Output Level:</b>     | 4Vrms (0dB 200k $\Omega$ load)                              |
| <b>Output Impedance:</b> | $\leq 200\Omega$ (Bal)                                      |
| <b>SNR:</b>              | $\geq 125\text{dB}$ (7.3V 4.4mm Input 0dB @ 200k $\Omega$ ) |
| <b>DNR:</b>              | $\geq 119\text{dB(A)}$                                      |
| <b>THD + N:</b>          | 0.006% (0dB 200k $\Omega$ load)                             |

## Headphone Output Section

### Headphone Outputs:

|              |        |
|--------------|--------|
| Balanced     | 4.4mm  |
| Single-Ended | 6.35mm |

### Headphone Output power:

|                     |                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------|
| Balanced (Max.)     | $> 15.1\text{V}/385\text{mW}$ (@ 600 $\Omega$ )<br>$> 6.2\text{V}/1,200\text{mW}$ (@ 32 $\Omega$ ) |
| Single-Ended (Max.) | $> 7.6\text{V}/98\text{mW}$ (@ 600 $\Omega$ )<br>$> 7.2\text{V}/1,600\text{mW}$ (@ 32 $\Omega$ )   |
| Balanced (RMS)      | $> 11.5\text{V}/2000\text{mW}$ (@ 64 $\Omega$ )                                                    |
| Single-Ended (RMS)  | $> 7.2\text{V}/1,600\text{mW}$ (@ 32 $\Omega$ )                                                    |
| <b>xMEMS</b>        | $> 21\text{Vpp}$ (Balanced 4.4mm), 22 $\Omega$ , 11V DC bias                                       |

**Output impedance:**

Balanced 4.4mm  $\leq 2\Omega$

Single-Ended 6.35mm  $\leq 1\Omega$

**SNR:**

Balanced  $\geq 125\text{dB}$  (7.3V 4.4mm Input 0dB @ 600 $\Omega$ )

Single-Ended  $\geq 122\text{dB}$  (1.9V Input 0dB @ 600 $\Omega$ )

**DNR:**

Balanced  $\geq 119\text{dB(A)}$  @ 0dBFS

Single-Ended  $\geq 119\text{dB(A)}$  @ 0dBFS

**THD + N:**

Balanced  $< 0.006\%$  (@ 360 mW/2.4V 16 $\Omega$ )

Single-Ended  $< 0.006\%$  (@ 100mW/1.27V 16 $\Omega$ )

**Gain:** 0dB, 6dB, 12dB and 18dB

**Frequency Response:** 10Hz-200kHz (-3dB)

**Power supply requirement:** DC 5V/Max. 2.5A (centre +ve)

**Power consumption:**

No Signal  $\sim 5\text{W}$

Max Signal  $\sim 13\text{W}$

**Dimensions:** 158 x 117 x 35 mm (6.2" x 4.6" x 1.4")

**Net Weight:** 495 g (1.09 lbs)

**Limited Warranty:** 12 months\*

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

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