



# Mimi for Headphones

End-to-end hearing intelligence platform for TWS, over-ear, and open-ear headphones.

Featuring Sound Personalization, Noise Adapt, and a customizable Voice Clarity mode to enhance face-to-face conversations.

License individual components or the entire package.

## COMPENSATION

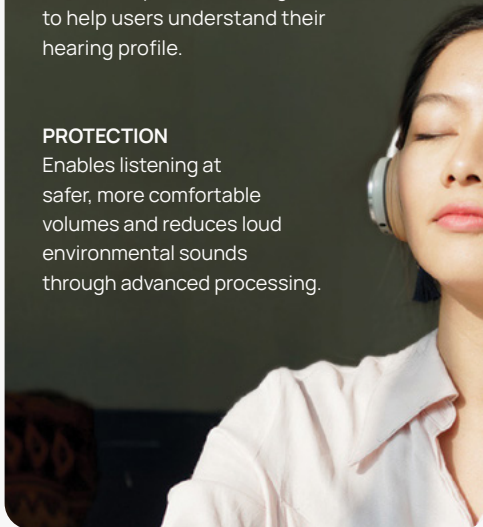
Adjusts for hearing loss while listening to streamed media, assists with real-time voice enhancement for clearer face-to-face speech, and adapts playback in real time to restore details masked by noise.

## AWARENESS

Provides a precise hearing test to help users understand their hearing profile.

## PROTECTION

Enables listening at safer, more comfortable volumes and reduces loud environmental sounds through advanced processing.



Today's consumers want more than great audio; they expect devices that personalize and enhance their listening experience.

Mimi offers headphone brands easy-to-integrate intelligent hearing features that meet user demand and set their products apart, backed by integration support from Mimi's expert engineering teams in Europe and China.

[mimi.io](https://mimi.io)

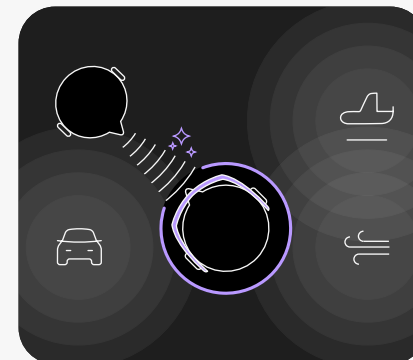
## VOICE CLARITY

### UNDERSTAND FACE-TO-FACE CONVERSATIONS EFFORTLESSLY

An AI-powered voice enhancement solution that delivers real-time speech isolation and background noise suppression to improve speech intelligibility in complex acoustic environments.

It combines:

- **Spatial Filtering Engine** for direction-aware beamforming
- **Voice Isolation and Noise Management System** for AI-based speech separation
- **Dynamic Processing Engine** for real-time gain and dynamic range control
- **Natural Hearing EQ Module** for tonal balance and spectral consistency
- **Stability and Safety Control Engine** for continuous monitoring of feedback risk, signal stability, and gain limits to ensure distortion-free output
- **Own Voice Management** for detecting the wearer's speech and adjusting amplification to preserve natural self-voice perception, without compromising conversational awareness



## TECHNICAL OVERVIEW

### Input Signal Classification

Real-time acoustic analysis

### Latency

4ms

### Acoustic Gain (hardware-dependent)

- 15 dB (OWS)
- 20 dB (TWS)

### Beamforming

Focused front beam mode for conversation boost or a mode simulating HRTFs for a natural listening experience.

- Microphone spacing 5-35 mm (suitable for TWS, OWS and OTE)
- Performance: 16 MCPS
- Feedback cancellation: 15-20 dB (OWS), 20-30 dB (TWS)
- Rear noise reduction: 3-5 dB

### AI-Based Noise Reduction and Voice Enhancement

- Memory Consumption: code 60k, data 310k, instance 300k
- Performance: ~170mcps

### Personalized Live Sound

Powered by Mimi audio processing and customized via a hearing test

### Compatibility

HiFi 4 / HiFi 5 or NPU-based architectures (e.g. Qualcomm S5/S7, Airoha, BES, and others)

SOUND PERSONALIZATION

TURN UP THE DETAILS, NOT THE VOLUME

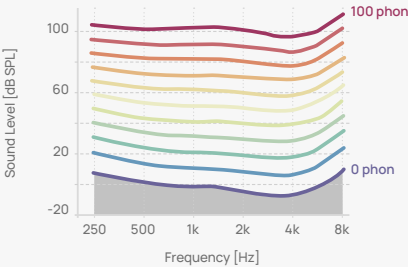
Adaptive audio technology that personalizes sound to each user's hearing profile, enhancing music, podcasts, and voice calls.

A quick hearing test creates a personal sound profile for each user. Mimi's patented processing then simulates the natural function of a healthy cochlea, dynamically adjusting the audio to match the user's unique hearing ability. This restores lost detail and makes sound clearer and more intelligible. Users can enjoy their content without needing to increase the volume.

Mimi Sound Personalization is integrated into 85+ headphone models worldwide, reaching millions of people. Once users try Sound Personalization, 92% choose to keep it turned on.

No Hearing Loss vs. Age-Related Hearing Loss

Normal Hearing (0 dB HL)



Hearing loss primarily causes an elevation of absolute threshold and a compression of equal loudness curves.

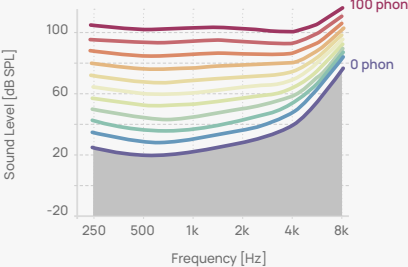
HEARING ASSESSMENT

A hearing test is the foundation for a truly tailored audio experience. Choose from one of two Mimi hearing tests to inform the user's personal sound profile.

**Pure-Tone Threshold (PTT) Test** measures the quietest sound a person can detect, delivers results comparable to a medical-grade assessment, is compatible with any headphone and smartphone running on Android or iOS, and gives users valuable insights into their hearing with a detailed Hearing Sensitivity Graph.

**Masked Threshold (MT) Test** measures the quietest level of a pure tone a user can perceive in the presence of a masker (i.e., noise) at a specific frequency. This correlates with the ability to make sense of complex soundscapes, known as spectral tuning, where broad tuning indicates hearing impairment.

Age-related Loss (80 years)



TECHNICAL OVERVIEW

Personal Sound Profile

Generated from a hearing test with advanced fitting based on the proven loudness-loss concept

Age-Based Fitting

Aligned with ISO 7029:2017 standards

Non-Linear Audio Processing

Restores more detail while reducing sound exposure compared to linear compensation systems

Maximum Gain

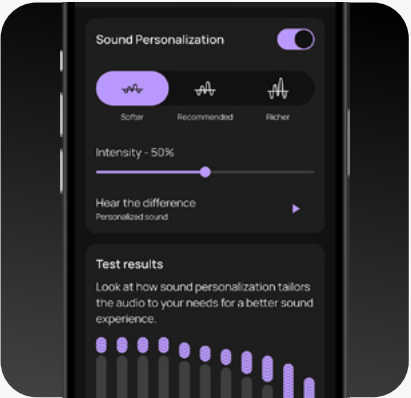
Up to 3 dB RMS

Fine-Tuning

User-adjustable settings (Softer / Richer / Recommended) based on the 'Just-Noticeable-Difference' concept

Compatibility

Available on all established Bluetooth SoCs, including (but not limited to): QCC30x, QCC51x, QCC52x, QCC72x; Airoha: AB15x; BES BES2x; Bluetooth: BT89x; WuQi: WQ70x; Jieli: JL70xx



NOISE ADAPT

CLARITY FOR OPEN-EAR LISTENING

Open-ear headphones are designed to keep the user aware of their surroundings, but noisy environments can make streamed audio difficult to hear. Noise Adapt was built for open listening devices where external noise cannot be controlled.

Rather than trying to remove environmental noise, Noise Adapt focuses on the signal itself, restoring the components that are masked in noisy environments.

By continuously analyzing the environment and incoming audio, Noise Adapt adjusts playback in real time to maintain clarity as noise conditions change, while preserving a natural listening experience.

TECHNICAL OVERVIEW

Non-Linear Processing

Moves beyond fixed EQ by applying level-dependent, multi-band processing that selectively enhances masked signal components in changing acoustic environments

Input Signal Classification

Adapts streamed audio based on levels of environmental noise

Adaptive Gain

Up to 6.5 dB \*

\*Adjusted for volume to maintain compliant output.

Compatibility

Available on all established Bluetooth SoCs, including (but not limited to): QCC30x, QCC51x, QCC52x, QCC72x; Airoha: AB15x; BES BES2x; Bluetooth: BT89x; WuQi: WQ70x; Jieli: JL70xx