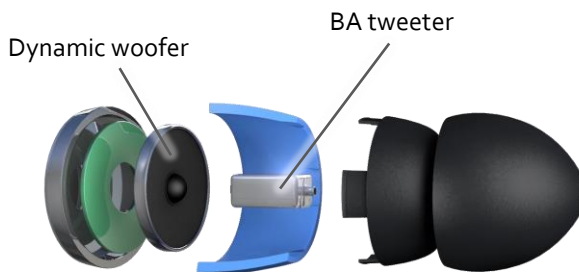


Demand is growing for both ANC and premium sound with extended treble  
This reference design demonstrates how a modern TWS meets both needs

## Key Benefits

- Fast time to market for TWS with premium sound and ANC
- Manufactured by a leading ODM
- Top-quality Knowles balanced armature tweeters and MEMS microphones
- Acoustic support provided by Knowles, including speakers, microphones and ANC



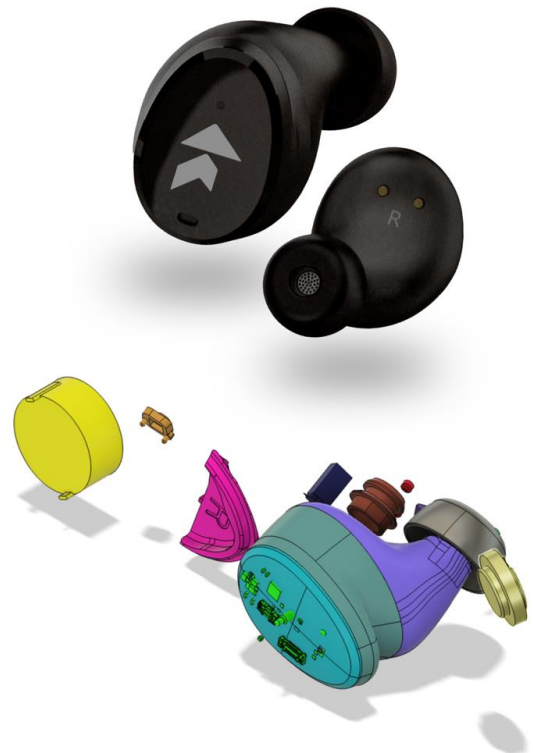
*Configuration of a hybrid earphone*

## Hybrid

In a hybrid configuration, each driver plays to its strengths. The dynamic woofer provides warm bass with sufficient output to support quality ANC. The balanced armature tweeter delivers clear, precise extended treble that adds life and vibrancy to the music. Hybrids are the fastest way to achieve premium sound while being compatible with existing ANC systems. They are ideal for increasingly popular HD music streaming.

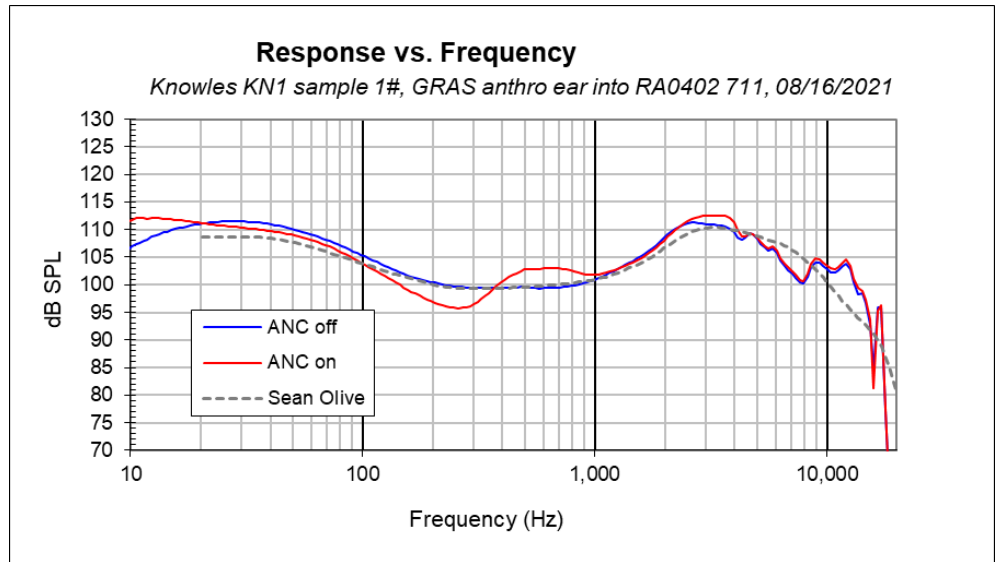
## Key Features

- Turnkey reference design, aesthetic customizations possible
- Premium sound hybrid driver: Knowles balanced armature + dynamic
- Hybrid ANC
- Transparency mode
- Extra long battery life:
  - Streaming: ~13 hours (ANC off)
  - ~10 hours (ANC on)
  - Talk time: ~8 hours
- Dual-mic outgoing noise reduction
- Touch control with voice confirmation

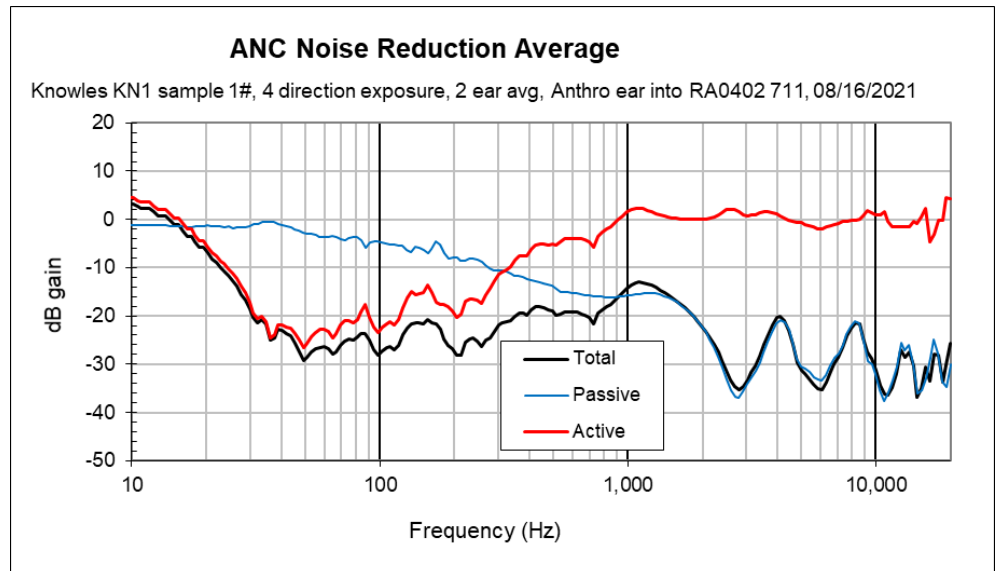


# Performance Measurements

Frequency response with ANC on and off.



ANC performance, active and passive. Average of four directions and two ears.



Occlusion reduction provided by combination of front vent and ANC.

