

Potential interference with the Cochlear MiniMic

The MiniMic does require 'a clear line of sight'. It cannot be guaranteed that the 2.4GHz band is interference free, but it is unlikely.

Digital wireless hearing instruments use short-range transmission (up to 11 MHz) and long-range transmission (2.4 GHz) and the devices can be vulnerable to electromagnetic Interference.

Caution with microwave ovens - they emit a high-level 2.45 GHz signal within the oven itself but are shielded to prevent most of this energy from.

Technical specifications

Operating range	Up to 25 metres (clear line of sight)
Power supply	External wall adapter
Wireless	2.4 GHz
Operating temperature	0 to 45 °C
Storage temperature	-20 to 45 °C

However, some of the energy can leak out and can interfere with other devices that operate in this 2.4 GHz frequency region such as ALD, WLAN and Bluetooth. There may be concerns about electromagnetic interference with large scale wireless electric charging, e.g. vehicles.

Crosse¹ (2011) concludes "It is sometimes difficult to determine the exact source of interference, but it is helpful if the patient can describe the environment where interference is noted. For example, the patient may complain of lower audio quality while watching TV through a hearing aid TV streaming device. It would be beneficial to determine what other devices that use a 2.4 GHz transmission frequency might be nearby (eg, WiFi, BT devices, or a microwave oven). The patient may complain of buzzing noises in certain rooms of an office building that utilizes ultrasonic security sensor systems. In this case, the building manager may need to be contacted to inquire about potential sources of ultrasonic interference. By recognizing potential sources of interference, clinicians and patients can better understand how to minimize them. Complete immunity to all forms of interference is almost impossible to achieve; however, with proper design and adequate instructions, the negative effects of interference in hearing aids can be minimized."

A line of sight issue might be resolved if a euro pin radio aid receiver is connected to the MiniMic. The user has the MiniMic close to them while the speaker wears a corresponding radio aid transmitter. However, see "Final Mic Mic Guidance October 2019" in the AIS Reference Document ALT section.

See also J:\AIS\AIS Folders\AIS Resources\Assistive Listening Technologies\RA Protocols and Guidelines\Current Information Sheets and Booklets\Cochlear\Wireless Accessories\MiniMic Guidance

¹ Crosse B (2011) Digital Wireless Hearing Aids, Part 4: Interference. Hearing Review. Available at <https://www.hearingreview.com/practice-building/practice-management/digital-wireless-hearing-aids-part-4-interference>