

Exposure to radio waves

Position statement

Nokia designs wireless network products that both transmit and receive radio frequency (RF) energy. We ensure that our product portfolio — including mobile radio access and other technologies, such as Wi-Fi — comply with established international standards and regulations on RF exposure as well as any specific requirements that may be applicable in the countries where Nokia products are operational. We provide installation procedures and training to those working for and with Nokia to ensure that equipment is installed correctly and that the resulting radio wave exposure levels comply with established exposure limits.

We engage with customers and partners about RF exposure from our products and provide detailed instructions to ensure they are knowledgeable to operate equipment appropriately to keep both the general-public and workers' exposure levels below the established exposure limits.

Since the 1990s we have supported the development of global RF exposure assessment standards through participation in international standardization bodies such as the International Electrotechnical Commission (IEC), the International Telecommunication Union (ITU) and the European Committee for Electrotechnical Standardization (CENELEC).

We track the reports published by expert committees mandated by national and international authorities to assess the advancement of scientific knowledge about human exposure to radio waves. These reports have been consistent in concluding that there is no established health effect from exposure to RF fields below the limits set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), the international commissions recognized by the World Health Organization (WHO) or similar recommendations from the Institute of Electrical and Electronics Engineers (IEEE).

The following statements apply to mobile and wireless network technologies implemented by Nokia:

- WHO backgrounder "[Base stations and wireless technologies](#)":
“From all evidence accumulated so far, no adverse short- or long-term health effects have been shown to occur from the RF signals produced by base stations. Since wireless networks produce generally lower RF signals than base stations, no adverse health effects are expected from exposure to them.”
- WHO 5G Q&A:
“To date, and after much research performed, no adverse health effect has been causally linked with exposure to wireless technologies. Health-related conclusions are drawn from studies performed across the entire radio spectrum but, so far, only a few studies have been carried out at the frequencies to be used by 5G. [...] Provided that the overall exposure remains below international guidelines, no consequences for public health are anticipated.”
- ICNIRP [information about 5G application](#):
“The ICNIRP RF EMF guidelines [...] protect against all potential adverse health effects relating to exposure to RF EMFs from 5G technologies.”

Resources

- World Health Organization (WHO): [Electromagnetic fields and public health](#)
- The International Commission on Non-Ionizing Radiation Protection (ICNIRP): [RF EMFs](#)
- GSMA: [EMF and Health](#)

We welcome questions and feedback. You can contact us at sustainability.global@nokia.com