



Wireless Tower Safety



RF Safety - FCC Authority

The FCC is required by the National Environmental Policy Act of 1969, among other things, to evaluate the effect of emissions from FCC-regulated transmitters on the quality of the human environment. The FCC's Rule and Regulation regarding this responsibility is 47 C.F.R. 1.1307(b), 1.1310, 2.1091, 2.1093.

The FCC has **sole jurisdiction** over the regulation of electromagnetic fields from all facilities and devices.

As such, the FCC has established guidelines and limits over emission and exposure to protect the general public.

RF Safety - FCC Exposure Limits

The FCC developed Maximum Permissible Exposure (MPE) limits for workers and the general public with input/recommendations from the following agencies:

The Environmental Protection Agency (EPA)

The Food & Drug Administration (FDA)

The National Institute for Occupational Safety and Health (NIOSH)

The Occupational Safety and Health Administration (OSHA)

The Institute of Electrical and Electronics Engineers (IEEE)

The National Council on Radiation Protection and Measurements (NCRP)

The American National Standards Institute (ANSI)

Additional information on the limits can be found on FCC's website, via FCC Bulletin OET 65: <https://www.fcc.gov/general/radio-frequency-safety-0>

RF Safety – Wireless Tower Sites

- **“Radiofrequency emissions from antennas used for cellular and PCS transmissions result in exposure levels on the ground that are typically thousands of times below safety limits.** These safety limits were adopted by the FCC based on the recommendations of expert organizations and endorsed by agencies of the Federal Government responsible for health and safety. **Therefore, there is no reason to believe that such towers could constitute a potential health hazard to nearby residents or students.”**

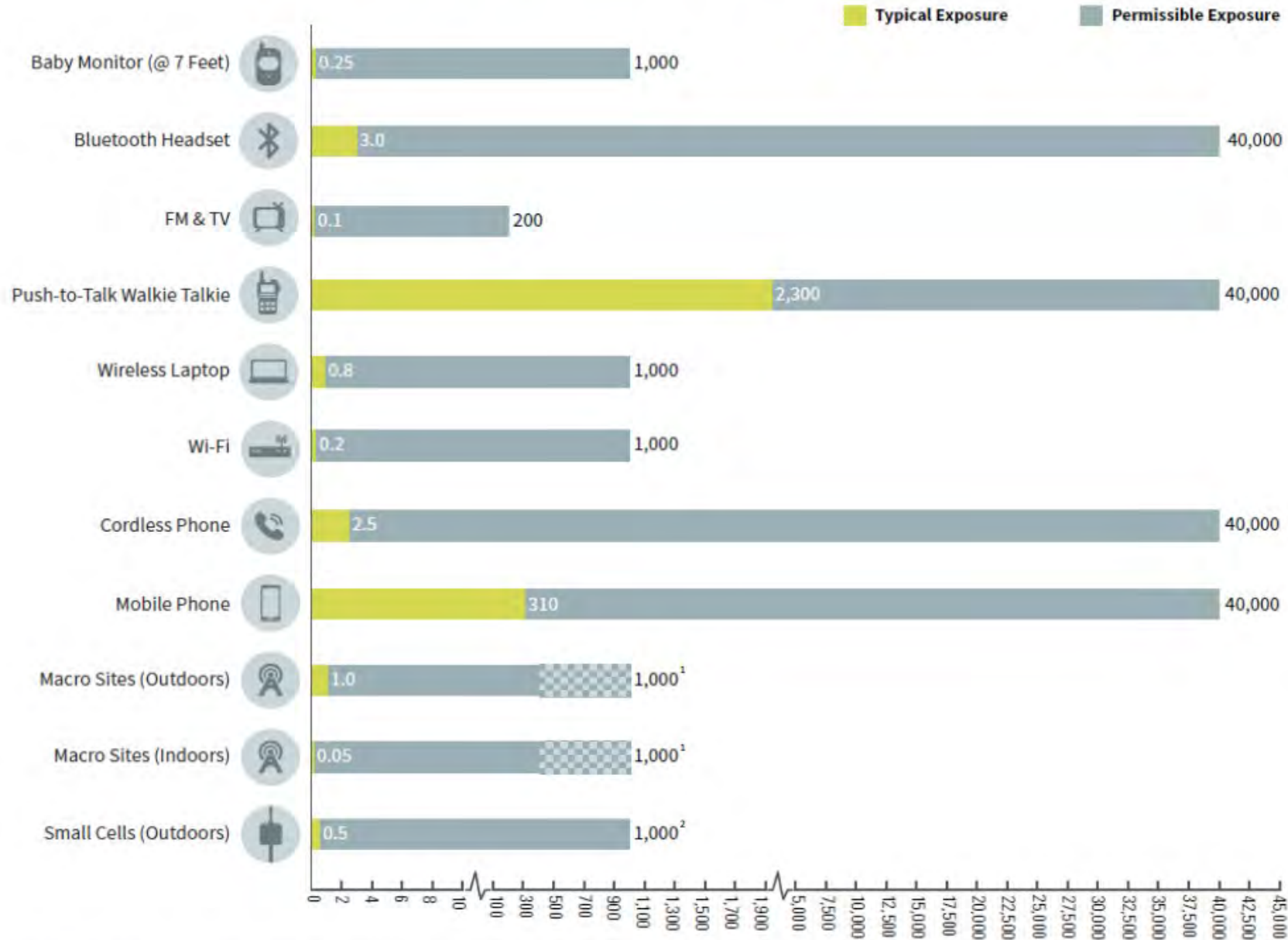
- FCC

RF Safety - Compliance & Resources

- Governmental and commercial wireless licensees take appropriate measures to ensure all equipment comply with the applicable exposure limits and guidelines.
- Third party routine RF testing regularly show exposure levels at ground level significantly below safety limits, which were set by the FCC with a safety factor margin of 50X.
- FCC - RF Safety FAQ: <https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety>
- FDA Review of Published Literature between 2008 and 2018 of Relevance to Radiofrequency Radiation and Cancer:
<https://www.fda.gov/media/135043/download>

Common Radiofrequency Exposures ($\mu\text{W}/\text{cm}^2$)

($\mu\text{W}/\text{cm}^2$) = microwatts per centimeter squared



1. For macro sites, the grey bar includes a hatched area depicting a range of permissible exposure limits (from 0.4 mW/cm^2 to 1 mW/cm^2), because the limits for macro sites vary depending upon the frequency being used.

2. Small cells operate on frequency bands that are almost exclusively above 1,500 MHz, so the limit of 1 mW/cm^2 applies.

Source: Andrew H. Thatcher, Board Certified Health Physicist © 2023