2.03 International RF Protection Guidelines

The table below includes both enforceable regulatory standards, and precautionary guidelines that have been recommended by international scientific advisory groups. It is an overview only, and does not include all frequencies, types of environment, countries, or organizations.

Selected International Guidelines for General Population Exposure

Country or Organization	Thermal	Non-thermal	Regulatory	Advisory	Power Density nW/cm^2	Field Strength V/m
US FCC - OET Bulletin 65 (1900 MHz)	X		X		1,000,000	61.4
Canada - Canadian Safety Code 6 (1900 MHz)	X		X		1,000,000	61.4
ICNIRP[1] Much of Western Europe, others (1900 MHz)	X		X		950,000	59.8
Italy[2]		X	X		9,500	6.0
Russia, China, Poland[3]		X	X		10,000	6.1
Switzerland[4]		X	X		4,300 - 9,500	4.0 - 6.0
Ecolog-Institut[6] (Germany, 2000)		X		X	1000	1.9
Salzburg Resolution[5] (non-pulsed signals)		X		X	10,000	6.1
Salzburg Resolution[5] (pulsed signals)		X		X	100	0.6
The BioInitiative Working Group (2007) [7]		X		X	100	0.6
The BioInitiative Working Group (2012) [8,9]		X		X	0.3 - 0.6	0.034 - 0.048

References for Section 2.03

1. International Commission for Non-Ionizing Radiation Protection (functions under the auspices of the World Health Organization).
http://www.icnirp.de/PubEMF.htm

2. Decree No. 381 of the Italian Ministry of the Environment, 10 September 1998. (Decreto 10 settembre 1998 n.381). Applies to fields from fixed (permanently installed) communications antennas, and in locations used for stays of 4 hours or more.
www.ambiente.it/impresa/legislazione/leggi/1998/dm381-98.htm

3. Foster, K. 2001. *Exposure Limits for Radiofrequency Energy: Three Models.* Proceedings of the Eastern European Regional EMF Meeting and Workshop. Varna, Bulgaria : 28 April - 3 May 2001.
http://www.who.int/peh-emf/meetings/en/day2Varna_Foster.pdf

4. Ordinance regarding protection against non-ionising radiation (NISV), Swiss Federal Council, 23 December 1999.
[For sensitive use areas: schools, hospitals, residential areas. Level is frequency dependent.]

5. International Conference on Cell Tower Siting. 2000. *Salzburg Resolution.* Salzburg, Austria, June 7-8, 2000.
Resolution and Signatories: http://www.salzburg.gv.at/salzburg_resolution_e.pdf
Summary: http://www.salzburg.gv.at/proceedings_(01)_title_and_summary.pdf
Full proceedings, access to individual papers: http://www.salzburg.gv.at/celltower_e

6. ECOLOG-Institut. 2000. *Mobile Telecommunications and Health - Review of the current scientific research in view of precautionary health protection.* [Scientific review commissioned by T-Mobil (DeTeMobil Deutsche Telekom MobilNet GmbH).]
Summary: http://www.hese-project.org/hese-uk/en/niemr/ecologsum.php
Full Report: http://www.hese-project.org/hese-uk/en/papers/ecolog2000.pdf

7. The BioInitiative Working Group. 2007. *BioInitiative Report: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields ELF and RF.*
Website: www.bioinitiative.org/

8. BioInitiative Working Group, Cindy Sage and David O. Carpenter, Editors. 2012. *BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation.*
Website: www.bioinitiative.org

9. The numbers recommended in the 2012 Bioinitiative Report are based on a few studies (3 or 4 studies) that observed effects at exposure levels of 3 - 6 nanoWatts, **with a 10 fold safety factor applied**, to yield a recommendation of 0.3 - 0.6 nanoWatts. The studies from which they are derived, while representing a valuable effort toward advancing our knowledge of RF bioeffects, lack the scientific veracity from which to derive definitive guidance. Until the quantity and quality of studies at very low levels increases, it would seem unwise to accept these low numbers as part of a meaningful precautionary guideline. In fact, such levels are routinely exceeded in most suburban and urban locations, even locations that have no nearby cell towers, just from the network of cellular providers that already exists virtually everywhere in the country. The editors of the 2012 Bioinitiative Report do state that, as in 2007, a larger number of studies show effects at the 50 - 100 nanoWatt level, so from the perspective of ***EMF Services*** that would seem to represent a more realistic reference point given our current state of knowledge.